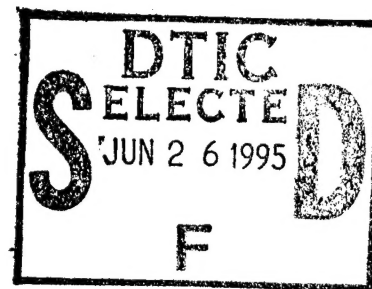


**NAVAL POSTGRADUATE SCHOOL
MONTEREY, CALIFORNIA**



THESIS

**STYGIAN MYTH: U.S.
RIVERINE OPERATIONS
AGAINST THE GUERRILLA**

by

Mark Freitas
and
Braddock W. Treadway

December, 1994

Thesis Advisor:
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Jan Breemer
Wayne P. Hughes

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AGAINST THE GUERRILLA**

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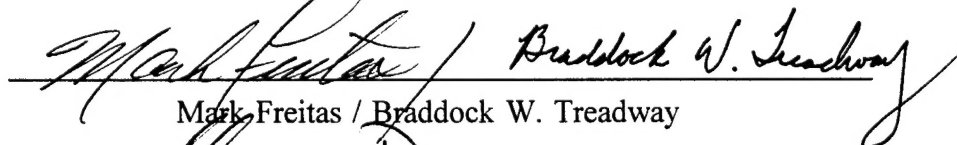
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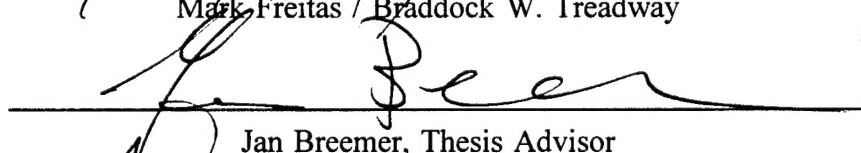
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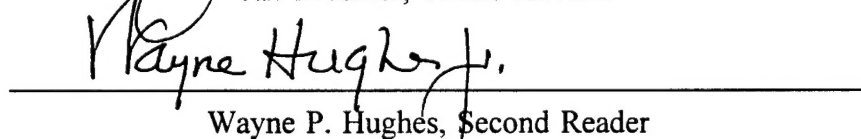
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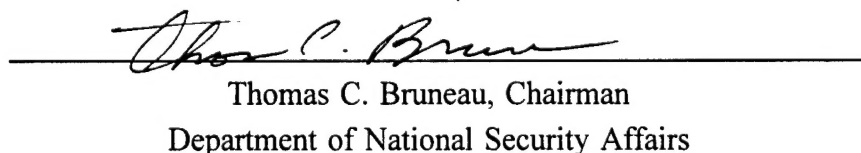
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ABSTRACT

This thesis examines the application of U.S. riverine warfare tactics against a guerrilla opponent in three unconventional conflicts: the Second Seminole Indian War (1835-42), the Vietnam War (1965-72), and the Colombian Drug War (1989-present). The three cases provide a means to establish tactical trends and constants of riverine warfare. From these trends and constants, the authors present implications for a present and future U.S. riverine warfare capability. Most notably, this thesis dispels the myth that absolute control of a riverine area can be achieved by a small force without resorting to total war. The three case studies provided the means to examine the effectiveness of those tactics that have prevailed throughout the history of riverine operations.

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EXECUTIVE SUMMARY

The purpose of this thesis is to establish the trends and constants of U.S. riverine warfare tactics in past and present unconventional conflicts. It excludes U.S. riverine warfare campaigns that were fought against a conventional opponent, or, more specifically, an opponent who practiced warfare in accordance with the orthodox principles espoused by Clausewitz and Jomini. Riverine warfare is defined as a special form of combat that blends military and naval forces into a joint riverine force that fights along the inland waterways, referred to as a riverine area. The riverine force can pursue two objectives: (1) to gain and maintain control of the waterways and contiguous land, and (2) to exploit the use of waterways for offensive assault operations. A riverine force uses a combination of specific tactics to obtain these objectives.

The relevance of studying tactics is drawn from Captain Wayne P. Hughes' study, *Fleet Tactics*. Tactics are defined as the handling of forces in combat; acts of deployment, maneuver, and application of force. Hughes suggests that the study of strategy is hollow without recognizing that tactics and strategy are interconnected. Tactics constrain the implementation of a strategy, since they provide the means to achieve the desired ends. Hughes presents a theory that uses military history to link the tactical and technological trends of the past to discern the future form of warfare. This thesis applies Hughes theory to examine the tactics of two past and one ongoing riverine warfare campaign in three unconventional conflicts: The Second Seminole Indian War (1835-42), the Vietnam War (1965-72), and the Colombian Drug War (1989-present). The cases provide a means to link the tactical trends of riverine warfare from which the authors suggest two primary implications.

The first is that U.S. riverine forces have relied on two strategies to gain complete area control of a riverine environment: (1) search and destroy, which relies on the tactics of raids to demoralize an opponent, and (2) clear and hold, which pursues tactics that establish strongpoints along vital waterways in a riverine area. The thesis suggests that although complete area control has never been achieved against a guerrilla opponent, clear and hold strategies have been more effective in establishing partial control.

The second implication is that the United States has consistently pursued search and destroy strategies in the first few years of each conflict studied in an attempt to win complete control of the riverine area. However, tactics employed to execute search and destroy strategies have failed to establish any form of lasting control, especially when fighting an opponent who practices guerrilla warfare within a riverine area.

The thesis concludes with a suggestions of how to improve the United States riverine warfare capabilities. Primarily, it recommends that the United States maintain a standing riverine force trained and imbued with tactics that support clear and hold strategies in unconventional conflicts. These strategies are more conducive for the employment of riverine forces in future conflicts. These forces must have the necessary tools to wage effective and efficient riverine warfare. Time may not be available to regenerate a tactical proficiency for an uncertain future requirement. A failure to appreciate the lessons learned from past ruthless riverine conflicts against the guerrilla will condemn the United States to sustain the Stygian Myth: *gaining absolute control of a riverine area with a small force without resorting to total war.*

I. INTRODUCTION: RIVERINE WARFARE

STYGIAN: Of or pertaining to the river Styx; hence, hellish; infernal; gloomy; deathly; also inviolable, as an oath sworn by the river Styx.¹

STYX: Greek Mythology: the principal river of the under world.²

. . . it can be seen that a struggle for the command of a great inland waterway is always likely to lead to operations of an abnormal kind, and is certain to test the skill and resource of the opposing commanders to no small extent. The essence of such operations lies in the judicious application of amphibious force and the cooperation of troops on the banks with vessels in the channel. Farragut's bold advance after the capture of Vicksburg was carried out almost entirely without the support of land detachments: it partook therefore of *the character of a raid, and its influence over the course of the campaign was in consequence not of a decisive kind*. The move down the river from Cairo, on the other hand, was carried out by a flotilla and an army acting in concert. *The force on land and the force on the water moved hand in hand, extending their influence and their control southward. What these won from the enemy, they kept.*³

This thesis examines the application of U.S. riverine warfare tactics to past and present unconventional conflicts. Tactical trends and constants of riverine warfare can be identified to determine a riverine capability for unconventional conflicts. More importantly, the study will provide implications for a present and future riverine capability

¹William Allan Neilson, Ed in Chief, *Webster's New International Dictionary of the English Language*, 2d Edition (Springfield, MA: G. & C. Merriam Company, Publishers, 1959), p. 2505.

²Ibid, p. 2506.

³Colonel C. E. Callwell, *Military Operations and Maritime Preponderance: Their Relationship and Interdependence* (London: William Blackwood and Sons, 1905), p. 412. Callwell devoted an entire chapter to the "command of the inland waters and waterways, and its influence upon military operations." Italics added for emphasis by authors.

to meet future contingencies. This chapter presents the theory, concepts, definition of terms, scope, methodology, and organization of the study.

Chapter I contains the theory, concepts, terminology, scope, and methodology of the study. Chapter II analyzes The Second Seminole Indian War. It provides the first use of riverine warfare conducted by U.S. riverine forces against guerrillas. Chapter III focuses on U.S. riverine operations conducted during the Vietnam War in the Mekong Delta against a guerrilla opponent. The same systematic approach will be used to analyze this case as that applied to Chapter II. Chapter IV presents a brief overview of ongoing riverine operations in Colombia. These operations prompted the regeneration of a U.S. riverine force. Chapter V establishes the tactical trends and constants of riverine warfare in unconventional conflicts. Chapter VI presents the implications for present and future riverine force employment and the general conclusions drawn from the study.

A. THEORY

Captain Wayne P. Hughes, Jr., USN, (Ret.), outlined a theory in his book, *Fleet Tactics: Theory and Practice*, that can be applied to the study of riverine warfare.⁴ Hughes defines a strategy as:

Policies and plans that govern actions in a war or a major theater of war. (Strategy establishes unified aims of war and sites for the employment of forces allocated toward those aims. The intention of strategy is to affect the outcomes of wars or campaigns; of tactics, the outcomes of battles or engagements. Therein lies the distinction and connection between them.)⁵

Tactics he defines as:

The handling of forces in combat; acts of deployment, maneuver, and application of force. (Sound tactics are procedures that employ forces to attain their full combat potential. It is not possible to define tactics or

⁴Wayne P. Hughes, *Fleet Tactics: Theory and Practice* (Annapolis, MD: Naval Institute Press, 1986).

⁵*Ibid.*, p. 287.

sound tactics as procedures to *win* a battle.)⁶

These definitions are used in this study. One notes that strategy alone does not determine whether or not an objective can be achieved. Strategy and tactics are interconnected. Tactics rely on the forces available and how they are trained to wage war. Only through effective tactics can one achieve the objectives outlined in a strategy. Therefore, this study focuses on the means (tactics) to achieve desired ends (the objectives of a strategy or plan).

Hughes also illustrates the importance of studying the tactical *trends* in previous conflicts to suggest the future form of warfare. He is quoted at length to present the logic of his argument, which is at the foundation of the theoretical approach used in this study:

The first is to correct the impression that strategy is somehow 'more important.' Strategy is constrained by the capacity to win battles; means must determine ends, just as much as ends govern means. My advice is to think of them as two sides of a coin, and if you are enthralled by strategy, remember to look at both sides of the coin.

The second is that there are principles, or constants, and trends, or changes in warfare.⁷ This is true of both strategy and tactics, and for that matter policy, logistics, and campaigning (or operational art). My advice is to forget forever the common interpretation of Mahan that he preached merely a search for principles of strategy. The uses and lessons of history run much deeper, and are in any case as likely to have tactical as strategic consequences.

The third is a theorem deriving from the first two. It is that discerning trends is the special way history can help keep from fighting the last war. Since tactics are as important in the long run as strategy, and since both constants and trends of tactics will be manifest to an acute observer, it is

⁶Ibid., p. 286.

⁷Hughes characterizes principles "as a guide to action," and prescriptive in nature. A constant is "an assertion about unchanging truth." Whereas, principles say "do this to succeed," a constant says "this is so, now apply the knowledge wisely." Cited from Hughes, "Mahan, Tactics, and Principles of Strategy," in John B. Hattendorf, ed., *The Influence of Mahan on History* (Newport, RI: Naval War College Press, 1991), p. 32.

important to look for both. My advice to military historians is to help military men, who seldom know history well enough *to establish the tactical and technological trends of the past in order to see the implications for the future.*⁸

If Hughes' theorem is correct, and is applied to the study of riverine tactics, one should be able to identify the tactical trends and constants of riverine warfare. If so, it should then be possible to extract future implications. This thesis provides an analysis of two cases of U.S. riverine operations against an unconventional foe, beginning with the Second Seminole Indian War (1836-1842) and ending with The Vietnam War (1964-1972). If one intends to propose implications for the future *mode of riverine warfare*, then the tactical trends and constants need to be established. But before one can discuss the subject of riverine warfare, it is necessary to provide the terms and concepts.

B. CONCEPTS

1. Riverine Warfare

Current doctrine provides the following concepts and definitions:

a. Riverine Area

The riverine area is an inland or coastal area comprising both land and water, characterized by limited land Lines of Communication (LOCs), with extensive water surface transportation and communications.⁹ Current doctrine for riverine operations categorizes riverine environments according to three types of environments. Type I environments comprise waterways that are not suitable for riverine operations except for small, shallow draft craft. The Type II environment is characterized by several navigable waterways and tributaries that can be exploited by shallow draft craft. Type

⁸Hughes, "Mahan, Tactics, and Principles of Strategy," p. 36. Italics added for emphasis.

⁹Naval Special Warfare Tactical Memorandum, NSW/USMC Riverine Operations Handbook (1 January 1993), p. 2-1.

III environments are dominated by waterways and are navigable by vessels with drafts of 20 feet or more.¹⁰

Riverine areas may include swamps, deltas, river systems, streams, canals, inundated areas, and other bodies of water that provide the predominant means of transport and communication within a geographic area. When the river meets the sea, it is difficult to determine where the riverine environment begins. For practical purposes, it is where the river craft can operate continuously despite rough seas. Therefore, military forces operating in such areas should consider the utility of waterways for mobility within the riverine area first, and relegate coastal waters to craft specially designed for such an environment.

b. Importance of Riverine Environment

Most major population centers are located on coasts, lakes, rivers, and inland waterways.¹¹ In less developed countries, inland waterways and riverine areas serve as the centers of life. People in those countries rely on the riverine areas for subsistence. As natural lines of communication, the rivers provide a cost-effective means of transport for the raw goods extracted from the interior of a state. The economies of many lesser developed states depend upon the delivery of these goods to the manufacturing centers and/or export locations along the coastal areas.

In *On War*, Clausewitz devotes several chapters to military operations in riverine areas. He first presents the advantages of defense along rivers, streams, swamps, and inundated areas. These waterways served as natural barriers to assaulting forces if the crossing points could be defended. Additionally, he recognized that these waterways could serve as lines of communication if they are navigable and provide a more secure and quicker means to deliver supplies and troops than overland LOCs. When Clausewitz directs his attention toward attacks upon swamps and flooded areas, he highlights the inherent advantage of such terrain to a defending force:

¹⁰Ibid., p. 2-2.

¹¹Ibid., p. 2-2.

Swamps. . . are too wide to enable us to drive the enemy off the opposite bank by cannon fire and permit us to construct our own means of crossing. Strategically, the consequence is that one avoids an attack on *swamps* and tries to bypass them. Where the country is so densely cultivated--as it is in many low-lying areas--that the means of passing are innumerable, the defenders' resistance may still be relatively strong; but for an absolute decision it will be that much weaker, and therefore, inappropriate. If, on the other hand, the low-lying ground can be fortified by flooding, as in Holland, resistance can grow to be absolute, and then any attack is bound to fail.¹²

The constraints and advantages of mobility prompted numerous nations to join land and sea forces to create ad hoc riverine forces. In 1883, Alfred T. Mahan chronicled the Union's riverine and coastal blockade operations during the American Civil War in *The Gulf and Inland Waterways*.¹³ He linked the strategic objective of gaining and maintaining control of the Mississippi Valley with the tactical means employed by the Union's naval and military forces. Mahan, a prominent theorist of naval strategy, establishes the historical foundation for the concept of riverine warfare. Hughes has cited Mahan's work as the best source that could have prepared young naval officers for the conduct of riverine warfare in the Vietnam War.¹⁴

c. Definition of Riverine Forces

This force is a specially trained combat group comprised of both military and naval elements organized for sustained operations in a riverine environment. The basic combat group will be generally smaller than for ground operations due to the operational environment.¹⁵ This riverine force exploits the mobility of the waterways to maneuver elements inland for operations directed against an enemy.

¹²Carl Von Clausewitz, *On War*, ed. and trans. by Michael Howard and Peter Paret (Princeton, NJ: Princeton University Press, 1984), p. 543. Italics added for emphasis.

¹³Alfred T. Mahan, *The Gulf and Inland Waterways* (New York: Charles Scribner's Sons, 1883).

¹⁴Hughes, "Mahan, Tactics, and Principles of Strategy," p. 35.

¹⁵George E. Buker, *Swamp Sailors: Riverine Warfare in the Everglades, 1835-1842* (Gainesville, FL: University Presses of Florida, 1975), p. 5.

d. Definition of Riverine Warfare

"It is a specialized form of combat neither naval nor military but a blend of the two conducted in a riverine environment."¹⁶ Furthermore, it consists of combat and associated support operations within the riverine environment. These operations can be conducted by joint naval, land, and air units.

e. Definition of River Warfare

An engagement between a naval force and an opponent who may either fight along the waterways or from the banks. But the form in combat ". . . is naval in execution notwithstanding the use of small vessels within restricted waters."¹⁷ However, the opponent may often employ artillery or mines to counter the naval vessels that attempt to control the waterways. The important distinction is that the naval force does not operate with ground forces, but rather operates independently.

f. Definition of Riverine Operations

These comprise all military activities designed to achieve or maintain control of a riverine area by restricting or eliminating the enemy's activities or by destroying his forces. Operations are characterized by the extensive use of river assault boats to transport military forces and equipment and to provide close combat support to ground assault forces in the area of operations.¹⁸

g. Control of Riverine Areas

Current proposed doctrine for joint riverine operations states that "riverine operations... employ various types of...forces...in a concerted effort to gain and/or maintain control of riverine, coastal, delta, or other uncontrolled areas."¹⁹

¹⁶Ibid., pp. 5-6.

¹⁷Ibid., p. 5.

¹⁸Captain Wade C. Wells, USN, (Ret.), "The Riverine Force in Action, 1966-1967," in Frank Uhlig, Jr., *Vietnam: The Naval Story* (Annapolis, MD: Naval Institute Press, 1986), p. 414.

¹⁹JOINT PUB 3-06, "Doctrine for Joint Riverine Operations" (proposed Pub, May 1994), p. I-1.

Since control of the riverine environment is the ultimate objective of riverine operations, the following section presents a model that suggests a means to evaluate how much control can be achieved through riverine operations. By pursuing control one is also denying the enemy the use of the waterways.

h. Gradations of Control

Rear Admiral J. C. Wylie developed a theory of power control in his book, *Military Strategy*. He states:

The successful strategist is the one who controls the nature and placement and the timing and the weight of the centers of gravity of the war, and who exploits the resulting control of the pattern of war towards his own ends.²⁰

This applies to riverine operation's ultimate objective of gaining and/or maintaining control within a riverine area, which inherently includes denying the enemy the use of the waterways. Also, these operations are conducted in support of a larger ground campaign. In current riverine operations doctrine, the tactics are not precisely linked to the obtainment of the ultimate objective. After careful consideration, the authors propose six levels of control that can be pursued by riverine operations. These levels were developed from discussions with Captain Hughes and will be referred to as the Hughes' Gradation of Control Model. This model shows a graduated approach to gaining control over a riverine area.²¹

(1) Incidental Raids.

Objective: To harass and disrupt enemy activity within a riverine area.

Means: Employment of a riverine force to conduct limited raids against the enemy either directly (target enemy forces) or indirectly (target enemy infrastructure; personnel and resources).

Forces: Mission dependent.

²⁰Ibid., p. 97.

²¹Hughes' gradation of control model was formulated during the thesis research process.

Level of Control: Local, temporary, and incidental to the purpose of the operation.

(2) Limited Denial Operations.

Objective: Deny the enemy movement along waterways within a selected portion of a riverine area.

Means: Employment of a riverine force upon selected waterways to interdict and impede enemy up and downriver (longitudinal) movement.

Forces: Small commitment of riverine forces for waterborne presence in selected locations exploiting the mobility of waterborne forces.

Level of Control: Limited longitudinal control of selected waterways.

(3) Temporary Control of Longitudinal-Waterway Movement Operations.

Objective: Temporarily deny the enemy longitudinal movement along waterways within a riverine area.

Means: Employment of riverine forces to control all vital points along the waterways within the riverine area.

Forces: Requires medium commitment of riverine forces for waterborne presence.

Level of Control: Temporary control of longitudinal traffic along major waterways within riverine area (fails to impede cross-waterway movement).

(4) Temporary Control of Cross-Waterway Movement Operations.

Objective: Temporarily deny the longitudinal and cross-waterway movement within the riverine area.

Means: Employment of riverine forces to patrol all navigable waterways within the riverine area.

Forces: Requires large commitment of riverine forces for waterborne presence for the duration of the campaign.

Level of Control: Temporary control of longitudinal and cross-waterway movement within the riverine area.

(5) Limited Riverine Area Control Operations.

Objective: Deny the enemy longitudinal use of specific waterways within the riverine area.

Means: Employment of riverine forces and establishment of enclaves to control all vital points along the waterways within the riverine area. Enclaves would be linked and supported by the riverine force.

Forces: Requires large commitment of riverine force for a sustained land and waterborne presence.

Level of Control: Partial area control.

(6) Riverine Area Control Operations.

Objective: Deny the enemy longitudinal and cross-waterway movement within the riverine area.

Means: Employment of riverine forces and establishment of enclaves at vital points along the waterways. Riverine forces required to patrol all waterways.

Forces: Requires large commitment of riverine forces for a sustained waterborne and land presence.

Level of Control: Highest degree of control established within the riverine area.

2. Riverine Warfare and the Guerrilla

a. Unconventional Warfare

A type of warfare that departs from the normal combat operations of organized military forces employing the standard weaponry of the period. Most often the term is applied to the irregular combat activities of partisans [q.v.] or guerrillas [q.v.] against the conventional forces of the occupying [or established] power.²²

²²Trevor Dupuy, Curt Johnson, and Grace P. Hayes, *Dictionary of Military Terms: A Guide to the Language of Warfare and Military Institutions* (New York: The H. W. Wilson Co., 1986), p. 223.

(1) Guerrilla Warfare. "Military and paramilitary operations conducted in enemy-held or hostile territory by irregular, predominantly indigenous forces."²³

(2) Guerrilla. "Spanish for 'Little War.' Pertaining to irregular warfare. A participant in fighting not directly connected with a formal military organization or operation."²⁴

b. Importance of Riverine Environment

The importance of a riverine environment to guerrilla war has been discussed by many observers. James E. Cross noted:

Guerrilla war can and has been waged in every sort of climate and country, but there is no question that jungles, *marshlands*, and mountains are the ideal forcing beds for this activity especially where the distances are great and the forces of law and order are small.²⁵

Writers on the theory and practice of guerrilla warfare have noted the significance of rugged and inaccessible terrain, such as riverine areas, as being essential for success. John Ellis has extracted salient comments from Clausewitz's *On War*:

Clausewitz notes within the chapter titled 'Arming the Nation' the advantages of promoting guerrilla warfare - 'people's wars.' Noting the importance of terrain, Clausewitz points to the key variable for determining success was the size of the country. 'The more an incumbent army spreads itself out, so much greater will be the effects of arming the nation.' Other key factors that are favorable for the pursuit of the guerrilla strategy include:

- (1) That war is carried on in the heart of the country
- (2) That it cannot be decided by a single catastrophe
- (3) That the theater of war embraces a considerable extent of the country

²³Ibid., p. 107.

²⁴Ibid., p. 107.

²⁵James Elliot Cross, *Conflict in the Shadows: The Nature and Politics of Guerrilla War* (New York: Doubleday and Co., Inc., 1963), p. 17. Italics added for emphasis.

- (4) That the national character is favorable to the measure
- (5) That the country is of broken and difficult nature, either from being mountainous, or by reason of woods and *marshes*, or from the peculiar mode of cultivation in use.

Within the actual nature of guerrilla warfare he notes

. . . Another. . . leading principle in the method of using such levies. . . is that as a rule, with this great means of defence, a tactical defence should seldom or never take place. . . They may, and should. . . defend the approaches to mountains, *dykes*, over *marshes*, *river-passage*, as long as possible. . . .²⁶

A participant in the 1833 revolutionary movement in Italy had this to say on guerrilla warfare:

. . . one should place one's forces in hidden, inaccessible spots, behind hills, rising ground, hedges; in valleys, on mountains, amongst rocks, in thickets, behind clumps of trees, along *river* banks, on the edges of forests and woods, in places in which it is easy to conceal oneself, so that one can attack the enemy at will and bring off minor successes. . . it [the guerrilla force] should choose appropriate terrain for its base area - mountain areas and plains dotted with forests, woods, hills, *lakes*, *swamps*, etc. . . .²⁷

The importance of exploiting inland waterways has been promoted by more modern guerrilla leaders, as well, including Mao Zedong. In the 1930s he identified the importance of inland waterways for basing guerrillas:

There are many historical examples of the establishment of bases in river, bay, and lake country, and this is one aspect of our activity that has so far received little attention. . . We should establish bases along *rivers* and

²⁶John Ellis, *A Short History of Guerrilla Warfare* (New York: St. Martin's Press, 1976), pp. 62-63. Italics added for emphasis.

²⁷Ibid., p. 82. Italics added for emphasis.

watercourses in territory controlled by the enemy so as to deny him access to, and free use of, the water routes.²⁸

c. Historical Instances of Guerrilla Uses of Riverine Areas

Beginning in the early 14th century, Irish rebels, using guerrilla tactics against the English occupation forces, sought refuge in woods and bogs. By the mid 1600s, the Tories (formerly Woodkernes) were infamous for their unique use of the bog area. A Tory would:

. . . lay down in the long grass of the *bog*. . . sometimes spring into a *stream*, and lay there like an otter, with only his mouth and nostrils above the *water*. . . Every man would take his gun to pieces, hid the lock in his clothes, stuck a cork in the muzzle, stopped the touch-hole with a quick, and threw the weapon into the next *pond*. . . When the peril was over... every man flew to the place where he had hid his arms, and soon were in full march towards some Protestant mansion.²⁹

During the American Revolution, Francis Marion created a successful partisan force in South Carolina. Operating from Snow's Island in the Great Pee-Dee River, Marion staged numerous raids and ambushes against Cornwallis' forces and supply lines. Operating from within the riverine environment, Marion employed unconventional tactics to erode the morale and will of the Tories and British.³⁰ The success of Marion depended upon his ability to maintain a base area within a riverine environment. This afforded his partisans the mobility and concealment necessary to evade and attack undetected.

²⁸Mao Tse-Tung, *On Guerrilla Warfare*, translated by Samuel B. Griffith, (New York, NY: Frederick A. Praeger Publisher, 1961), p. 109. Italics added for emphasis.

²⁹*Ibid.*, p. 39. Italics added for emphasis.

³⁰Bruce Lancaster, *Phantom Fortress* (Boston, MA: Little, Brown, and Co., 1950), p. 74. Also see, Robert B. Asprey, *War in the Shadows: The Guerrilla in History* (New York: William Morrow and Co., 1994), pp. 67-68, and Fred Cook and Bruce Lancaster, *The American Revolution* (New York: American Heritage Press, 1958), pp. 167-170.

During the early years of the First Republic in France, peasants would at times oppose the new revolutionary government by waging guerrilla campaigns. One such instance took place in 1793, when guerrillas of the Vendee River region utilized the riverine area to its maximum advantage. The Vendean guerrillas of the Lower Vendee were able to mount numerous ambushes upon the new French Republican Army and then swiftly withdraw into the marshlands. These guerrillas were so effective that a French general stated:

I assure you nothing was wanting to the soldiers save the uniform. . .To me this war with peasants, of brigands, which has been so greatly ridiculed and treated with contempt. . .has always seemed the great test of the Republic.³¹

During the period of 1836 through 1842, the Seminole Indians staged a protracted, defensive insurgency against a joint U.S. military force. Relying on the waterways and dense vegetation of the Florida Everglades, the Seminole warriors employed unconventional riverine tactics against a larger force exacting a high cost.

d. Control of Riverine Area

The traditional approach to the control of a riverine area centers on the physical terrain. The employment of a riverine force within a specific region can achieve a gradation of control. Conventional riverine tactics target only one, the enemy's mobility along waterways, of the three necessary conditions required for the sustainment of guerrilla war. These necessary conditions for guerrilla war are as follows:

The first is greater mobility than the conventional military forces opposed to them. The second is a detailed and intimate knowledge of the countryside where the fighting takes place. Being native to the battlefield, the guerrillas are likely to know it better than the soldiers who enter the region to restore order. The third needed advantage is a better intelligence

³¹Ellis, p. 55.

service than that of the government forces, and this must include a high level of security as to their own plans and movements.³²

Mobility is dependent upon knowledge of the countryside. This stems from an effective intelligence capability. The effectiveness of this intelligence capability stems from the support of the population that inhabits the respective countryside. This support facilitates the guerrilla's attempt to exploit the advantages of greater mobility, better local knowledge of the countryside, and a better intelligence capability than the occupying force. Within the riverine area, the people also provide the essentials for an insurgency movement: supplies, recruits, and intelligence.³³

The unconventional approach to the control of the riverine areas centers on the control of the "human terrain," the people. The guerrillas' tactics center on employing a specific level of force, coercion, and/or terrorism against a specific population to obtain a level of support. Neither a large portion of the population nor the complete loyalty of the people are required to ensure the provision of adequate support.

Within a riverine area, it is essential for the guerrilla to direct his tactics towards the obtainment of the three ingredients (supplies, recruits, intelligence) that only the "human terrain" can provide. Within the context of marginal terrain (riverine areas, jungles, and mountainous areas), author Patrick O'Sullivan notes:

The essence of guerrilla tactics is to trade space for time. The enemy is allowed to dominate a lot of ground, but his morale and force are slowly eroded by a thousand small cuts. He is drawn to extend his supply and communications lines and spread his firepower thinly, so that his internal connections as well as his flanks may be gnawed and his resolve eroded by constant nipping. Hit-and-run raids, diversions, sabotage, terrorism, and ambush are the chief engagements. Although feinting and running to avoid pitched battles are primary ploys and although strategically guerrilla war is usually defensive, to achieve success, it must be tactically on the offensive. Employing what Liddell Hart calls "indirect methods," guerrilla

³²Cross, pp. 27-28.

³³Ibid., p. 35.

actions inspired his advocacy of waging a war of movement and surprise

The ultimate objective of both sides in guerrilla war is *control of the people*. Thus, in order to succeed, any force countering guerrilla action must not only defeat the insurgents militarily, but also politically separate the population's sympathy from them and ensure the existence of an acceptable social order and government.³⁴

The key point drawn from O'Sullivan is that guerrilla movements will originate and flourish in those marginal areas where government control is limited. "The people will provide support for that side which can punish them most severely for disloyalty to its cause."³⁵ In the guerrilla's eye, control of the riverine area is exercised through the control of the human terrain.

The goal of the guerrilla and the government is to establish "political authority over a specified population within a defined geographic venue . . . [both] forces have two tools to obtain this goal: popular perceptions of legitimacy and a credible capacity to coerce . . . the credibility in one side's ability to coerce was defined by the recipient (the people)." Thus, the guerrilla's perception of control of a riverine area focuses, first and foremost, on the human terrain.³⁶ Control of the physical terrain only becomes critical when the guerrilla is threatened with the potential loss of his sanctuary within the marginal terrain.

C. SCOPE OF THE STUDY

This study examines riverine operations directed against a guerrilla opponent. Therefore, it concentrates on instances of U.S. riverine warfare that supported a larger

³⁴Patrick O'Sullivan, *Terrain and Tactics* (Westport, CT: Greenwood Press, 1991), p. 126. Italics added for emphasis.

³⁵Cross, p. 38.

³⁶Larry Cable, "Reinventing the Round Wheel: Insurgency, Counterinsurgency, and Peacekeeping Post Cold War," unpublished paper in Revolutionary Warfare Course, Supplemental Readings (USAF Special Operations School, Hurlburt Field, FL, undated), p. 2.

land campaign against a guerrilla opponent. To limit the scope the authors drew upon a suggested linkage of past conflicts that was proposed by Sam C. Sarkesian. In a paper submitted during a two-day symposium on "The Role of Special Operations in US Strategy for the 1980s," Sarkesian notes:

In the history of the U.S. military operations against the *Seminole Indians* (1836-43), in the Philippines (1898-1901), and in *Vietnam* (1964-72), one is struck by their similarities with respect to political-military problems, military operations, and insurgency forces. Unfortunately, there has been little historical analysis for the development of doctrinal guidelines. To reduce the gap between past experience and current operational contingencies, there is a pressing need to examine the doctrinal relevance and irrelevance of the lessons of the Vietnam War. . . .³⁷

It is recognized that U.S. forces have been engaged in riverine and river warfare throughout the world from involvement in Africa, Latin and South America, Asia, and Europe. This study concentrates on the employment of naval and military units organized in a combat force for sustained operations against unconventional opponent, in a riverine environment. The following conflicts are reviewed: The Second Seminole Indian War (1836-1842), the Vietnam War (1964-72) and the ongoing counterdrug riverine operations in Colombia (1989 - present). Both cases involved the formal organization and development of riverine forces specifically designed for sustained operations against a guerrilla opponent. Second, these riverine forces were in support of a larger counterinsurgency campaign.

The Seminole War was the first instance where both naval and military units were organized into a riverine force to engage an unconventional enemy in a riverine environment. As noted by author George E. Buker:

. . .striking similarities may be observed between the naval operations of the Seminole War and those of the Vietnam War. In spite of the

³⁷Sam C. Sarkesian, "Organizational Strategy and Low-Intensity Conflicts," in Frank R. Barnett, B. Hugh Tovar, and Richard H. Shultz, eds., *Special Operations in U.S. Strategy* (Washington, D.C.: National Defense University Press, 1984), pp. 271-72. Italics added for emphasis.

technological changes, the organization and modus operandi were basically the same.³⁸

Although not within the scope of this study, the American Civil War combined both naval and military forces to prosecute riverine warfare, especially in the Mississippi Valley. Naval and military officers involved in the Second Seminole Indian War led riverine forces in the Civil War.³⁹ Riverine operations in the Civil War have been cited in doctrinal publications, official histories, and associated articles as the most relevant case study for riverine warfare in Vietnam.⁴⁰ However, the Civil War was waged against an enemy that relied on the orthodox mode of conventional warfare, and therefore, is not reviewed. Instead, the tactical innovations are examined during the chapter on constants and trends.

The Vietnam War included extensive riverine operations in the Mekong Delta (IV Corps Tactical Zone), southern portions of the III Corps Tactical Zone (CTZ), and to a lesser magnitude in I Corps area of operations. U.S. riverine forces played a crucial role against an unconventional opponent. As in previous conflicts, the guerrilla relied on the riverine area to establish base areas from which to build support and wage a guerrilla war. The riverine forces challenged the Viet Cong's ability to maintain control over the numerous villages throughout the riverine areas.

Riverine operations in Colombia are being conducted by the Colombian Marine Corps against a guerrilla force who has associated itself with drug traffickers. The Colombian Marine Corps requested that the U.S. Marine Corps aid them in developing a riverine force capability. This regenerated the requirement to consider whether or not the U.S. needed to maintain a standing riverine warfare capability.

³⁸Buker, p. 139.

³⁹Kenneth J. Hagan, *This People's Navy: The Making of American Sea Power* (New York: The Free Press, 1991), p. 130.

⁴⁰Hughes, *The Influence of History on Mahan*, p. 35. See also, William B. Fulton, *Riverine Operations, 1966-1969* (Washington, D. C.: Department of the Army, 1973), p. 3.

The authors submit that the through evaluating the employment of riverine tactics from the earliest case to the most recent, one can establish tactical trends and constants. The establishment of tactical trends and constants will provide a means to see the implications for future form of riverine warfare.

D. METHODOLOGY

To trace the tactical trends and constants, the authors developed an approach to analyze three cases of U.S. involvement in riverine warfare. This historical approach will aid in determining the tactical trends and constants of riverine warfare as waged by U.S. riverine forces against unconventional opponents. Since tactics are subject to change by technological innovation, the authors link those major technological innovations that prompted a change in U.S. riverine tactics. The Hughes' gradations of control model will be applied to each conflict to determine the level of control achieved by U.S. forces employing riverine tactics. Hughes' elements of the combat process, as presented below, will be used in each case to categorize the tactical trends and constants.

1. Structured Analysis

Each case will be evaluated using the following structured approach:

- The *objectives* of the riverine operations and their *integration* into the overall campaign objective.
- The tactics employed by U.S. riverine forces to achieve the intended objectives. (Hughes' gradations of control model can be applied to link the tactics to the intended objectives.)
- The enemy's tactical response to U.S. riverine operations.
- The U.S. riverine forces' tactical adjustments during the conflict.
- Technological innovations that impacted on riverine tactics.
- Analysis of the tactical outcome of the riverine operations.

2. Terminology

U.S. riverine tactical trends will center upon the following elements of the combat process: Command and Control (C²), Firepower, Scouting, Antiscouting, Screening, and Maneuver. The definition of each are extracted from Hughes' *Fleet Tactics*:⁴¹

Antiscouting. Actions taken to destroy, diminish, or preclude enemy scouting effectiveness. (Antiscouting includes the destruction of enemy scouts, such as shooting down surveillance satellite or a reconnaissance aircraft, deceiving enemy sensors, jamming sensors to reduce tracking or targeting effectiveness, and interfering with a scouting report.)

Command and Control (C²). Decisions made and actions directed by the commander to employ force, counterforce, scouting, and antiscouting resources to accomplish an objective. (C² includes the integration of scouting information, combat decisions, and the dissemination of these decisions, but it excludes acts of scouting themselves. Support for C² includes staff work, decision aids, and communications systems.)

Firepower. The material means of a fighting unit to reduce enemy forces. It is the capacity to destroy, measured in rate of delivery (as, for instance, shells per minute).

Maneuver. Movement to achieve a tactical advantage. (Maneuver may be associated with force, counterforce, scouting, or antiscouting. Ideally, maneuvers are made with all four elements in mind.)

Scouting. Acts of search, detection, tracking, targeting, and enemy damage assessment, including reconnaissance, surveillance, signals intelligence, and all other means of gathering information that may be used in combat. Scouting is not accomplished until the information is delivered to the commander being served.

Screening. The use of forces to help protect other more valued units, accomplished by some combination of antiscouting and escorting, and often by scouting as well.

⁴¹Hughes, *Fleet Tactics*, pp. 287-89.

These elements of the combat process will allow us to categorize specific U.S. riverine tactics employed within both cases. This will facilitate the establishment of trends and constants throughout the history of U.S. riverine warfare.

II. THE SECOND SEMINOLE INDIAN WAR: 1835 -1842

A. THE WAR

1. Nature of the Conflict

The treacherous Everglades of southern Florida were the setting for the U.S. experience with riverine warfare against an unconventional opponent. The Second Seminole Indian War (1835-1842) had its origins in the Seminole refusal to abide by the U.S. imposed treaties that mandated relocation to reservations west of the Mississippi River.⁴² Refusing to leave ancestral homelands, they waged an effective defensive insurgency for seven years to preserve their autonomy in the heart of the Everglades. This area provided the ideal sanctuary from which a few hundred warriors waged a guerrilla war against "conventional" Army and Navy opponents. Neither service was prepared for this kind of war. In the event, both were forced, for the first time in U.S. history, to merge their capabilities in a riverine force which as its ultimate goal the removal of the Seminoles from Florida. The war tested the mettle of no fewer than eight field commanders. Those who insisted upon employing traditional service methods of warfare would remember the conflict as a "graveyard for military reputations."⁴³

2. Evolution of Riverine Warfare

Riverine warfare became necessary after many land campaigns failed to "trap" the Indians between converging columns of soldiers and force a decisive battle. In the best traditions of Napoleonic warfare, the army hoped to employ superior firepower to

⁴²The following references provide the foundation for this chapter: George E. Buker, *Swamp Sailors: Riverine Warfare in the Everglades, 1835-1842* (Gainesville, FL: University Presses of Florida, 1975), Virginia Bergman Peters, *The Florida Wars* (New York: Archon Books, 1979), John K. Mahon, *History of the Second Seminole War* (Gainesville, FL: University of Florida Press, 1967), John T. Sprague, *The Origin, Progress, And Conclusion Of The Florida War* (Gainesville, FL: University of Florida Press, 1964 reprint of the 1848 version), Myer M. Cohen, *Notices of Florida and The Campaigns* (Gainesville, FL: University of Florida Press, 1964 reprint of the 1836 version), Mark F. Boyd, *Florida Aflame: The Background and Onset of the Seminole War, 1835* (Tallahassee, FL: The Florida Historical Quarterly, Vol. XXX, No. 1, July, 1951).

⁴³T. Harry Williams, *The History Of American Wars From 1745 to 1918* (New York: Alfred A. Knopf, 1981), p. 142.

overwhelm the enemy, demoralize his fighting spirit, and decisively end all hostilities. Two factors denied success: first, the Seminole warriors seldom presented the opportunity for such a battle to develop, preferring the "irregular" small unit tactics of the raid and the ambush instead. Second, on those rare occasions when a large force of Indians did engage in battle, the terrain inhibited the maneuvering of superior firepower. For the Indians, the Everglades became the natural "equalizer" thwarting the regular land force's attempts to apply superior firepower. Operating from the Everglades, the Seminoles mounted many raids to harass and disrupt U.S. military efforts after which they sought the safety of this sanctuary. Eventually, it was the innovations of two junior naval officers that the battle against the Seminoles was brought to the uncharted waterways of the Everglades. (See Figure 1)

3. Early Riverine Operations

In order to halt the flow of weapons to the Seminoles, which were thought to come from Spanish traders from neighboring Cuba and the Bahamas, the United States Navy's West India Squadron was initially directed to establish a blockade around southern Florida. Although the force never intercepted any gun runners, sloops, schooners, steamships, and gunbarges were kept on station throughout the war. To reinforce this effort, "boat expeditions" comprising sailors and marines patrolled the coastal and inland waterways. Additionally, the Navy helped the Army with the establishment of supply depots along navigable rivers. Steamships towed gunbarges armed with naval cannon up these rivers in an effort to supply the depots. However, poor coordination between the land and river forces usually hindered rather than helped sustain the vital supply bases. Without these forts, the Army could not stage an effective land campaign in a region that virtually prohibited overland transportation of personnel and supplies.

By late 1837, the Seminoles were waging an effective raiding campaign from inside the impenetrable Everglades. A completely different and innovative strategy was required. After two years, the littoral efforts of the Navy provided only limited support for the land campaign. After conducting many forays along the inland waterways during his boat expeditions, Navy Lieutenant Levine M. Powell proposed a concept of

operations to the Secretary of War, Joel R. Poinsett, in September of 1837. This concept of operations was designed to:

. . . circumnavigate the Everglades . . . discover the aforesaid retreats, to endeavor to capture the women and children, to fall upon the war parties . . . and to harass and terrify the nation, by this unexpected inroad from this quarter.⁴⁵

This concept would lay the foundation for an effective strategy that called for the development of riverine forces and tactics. It took five years for the riverine force to fully exploit this unique form of warfare against a guerrilla opponent.

4. Lieutenant Powell's Campaign

During the command of Major General Thomas S. Jesup, the fifth since the onset of hostilities, Powell was placed in charge of a riverine force consisting of 200 soldiers, sailors, and marines. This force was directed to enter the Everglades and drive the Indians into the columns of soldiers positioned to the north and southwest edges of the swamps. During late December 1837, Powell's force, embarked on flat-bottomed boats, entered the interior from the east and engaged in numerous small skirmishes.

When returning from operations in January 1838, the riverine force discovered a trail along the St. Lucie River leading into the Jupiter Inlet. Following the trail by foot, Powell's troops captured a Seminole woman who provided them with essential information. After the troops had returned to the boats, a raiding force was organized. a raiding force. Guided by the Indian, Powell's force of 85 men marched five miles into the interior in search of the enemy encampment. Sighting smoke coming from inside the swamp, the force was ordered to form in the conventional "line" before marching toward the suspected site. Just outside the area, the force was met with heavy gunfire from the Seminoles who had positioned themselves behind covered and concealed positions. Immediately, Powell ordered a charge and slowly pushed the Seminoles back

⁴⁵Buker, p. 56.

into the recesses of the swamp. Within minutes, the sporadic fire from the Indians slowly increased and finally overcame that of the attacking force. Recognizing the futility of continuing the assault, LT Powell ordered a retreat.

Suffering numerous casualties, the riverine force fought a fierce retreat back to the boats. In its haste, the survivors were forced to abandon one boat fully laden with essential supplies. Attacking an undetermined size force in unfamiliar terrain late in the day proved costly to the newly organized riverine force. Thanks to the discipline of the unnerved soldiers, casualties were limited to five dead and 22 wounded (including Powell himself). A couple of months later, LT Powell had another opportunity to pursue his concept of bringing the war to the Seminoles within their riverine sanctuary.

In March 1838, Powell was ordered to support Army Lieutenant Colonel James Bankhead. Powell scouted the area in vicinity of the New River before the arrival of Bankhead's combined force of regulars and Tennessee volunteers. Powell's riverine force located a trail that led to a "hummock" within the swamp. He communicated this information to the colonel who was waiting at the edges of the swamp. Both commanders agreed to join forces and push deep into the swamps to attack the Indians. Upon reaching the suspected position, the combined riverine force attempted to parley with the defenders who answered with gunfire. Immediately, the force reorganized into three units. One unit maintained a center position to provide holding fire while another swept around to the left through two feet of water. The third, mounted on boats, maneuvered to the right through deeper water - a classic double envelopment was in the making.

When the units came within range of the Indians' rifles, Powell used a naval 4-pounder on his lead boat to force the Indians to vacate a favorite defensive position. The Seminoles abandoned numerous supplies, including 20 skin canoes. Although no Indians were killed or captured, this action was the first successful attack within the sanctuary of the Seminoles. Powell's concept was proven effective, especially when using shallow draft boats that could mount small naval artillery. The engagement at the Jupiter River inlet led to further advances in the effective use of riverine forces.

5. Colonel Harney's Campaign

On 23 July 1839, Colonel William S. Harney's small detachment of 26 soldiers was overrun and massacred by the Seminoles at a trading post on the Caloosahatchee River. Escaping the massacre with a few of his soldiers, Colonel Harney set the stage for a new form of riverine warfare. During December 1840, the colonel made use of a runaway black slave, (who had been captured at one time by the same Indians) to plan a raid against the unsuspecting Indians. Acquiring 16 canoes from the Navy's riverine force, Harney embarked 90 men for a punitive expedition deep inside the Everglades. Using the black slave as a guide, the colonel led the riverine force toward the Seminole encampment. A few days into this expedition, it encountered small bands of Indians either on shore or canoes. To achieve surprise (though in violation of his superior's orders), Harney disguised his force to appear like Seminoles by wearing native clothing and applying "war paint" to the soldiers' faces. The deception proved quite successful. Never suspecting that the "whiteman" could enter so deep into the Everglades, the Indians were caught by complete surprise. The riverine force killed most of the warriors and destroyed the encampment. Upon departing, the colonel hung the dead bodies of the Indian leaders from nearby trees as a reminder for the massacre at the Caloosahatchee River. Harney's 12 day venture into the uncharted interior immediately caught the attention of LT John T. McLaughlin, USN. Like his predecessor LT Powell, McLaughlin continued to bring the battle to the Seminoles by assuming command of what was to be known as the "Mosquito Fleet."

6. Lieutenant McLaughlin's Campaign

In 1839, Lieutenant McLaughlin, Powell's former executive officer, was in command of the inshore blockade around the southern tip of Florida. This force, commonly referred to as the Florida Expedition, consisted of schooners, barges, and a limited number of flat-bottomed boats. Frustrated by the passivity of the blockading routine, McLaughlin sought a more offensive strategy. Through his efforts, more personnel, flat-bottomed boats and recently acquired canoes were added to the force now referred to as the "Mosquito Fleet." These additions provided an enhanced capability to

reach beyond the headwaters of the rivers that entered the Everglades. This finally brought the superior firepower of the United States directly upon the Seminole warriors and their supporters.

McLaughlin conducted numerous expeditions throughout the Everglades, predominantly using flat-bottomed boats and canoes. Lightly loaded, the canoe was used as the primary means to get within close proximity of the Indians wherever they ventured. Becoming familiar with the region through the use of captured black slaves and Indians, the Mosquito Fleet developed into an effective combat capability. Between December 31, 1840, and January 19, 1841, the force, manned by 150 sailors and Marines proved worth by crossing of the Everglades, thereby becoming the first U.S. forces to accomplish such a feat. More important, this demonstrated the ability to leave the protection and support of the schooners and barges and conduct sustained operations deep within the interior of an enemy's riverine sanctuary. Henceforth, McLaughlin and Harney joined forces and conducted numerous "sweeping" and "flushing" operations within the Everglades. This combination of different tactics of riverine warfare provided the synergism for an effective campaign against the Seminoles. Although few warriors were encountered, the riverine forces discovered many well-hidden encampments and destroyed vital resources. The initiative had been seized from the Indians who were now forced to operate in small family groups so as to minimize the risk of detection.

The highlight of the Mosquito Fleet came during its final expedition in February 1842. By simultaneous deploying two separate units from the west and east sides of the Everglades, McLaughlin's "Task Force" planned to conduct a pincer movement over the course of 60 days. Living in dug-out canoes and foraging for food from the interior, the riverine force demonstrated a capability for sustained operations that demoralized the Indians. Again, few warriors were encountered, but more concealed cultivated areas were located and destroyed which tested not only the endurance of the warriors but also of the women and children who supported them. This "total war" against the Seminole nation deep within its sanctuary, reduced the Indians to basic food gathering techniques for subsistence. By May of 1842, fewer than 300 Seminoles, a 100 of which were warriors,

had their activity restricted to basic survival within the confines of the swamps. After numerous requests by the last field commander, Colonel Worth, the Secretary of War authorized a cessation in hostilities on 10 May 1842. The next month, under orders, the Mosquito Fleet was disestablished. At this time, the force consisted of twelve small sailing vessels, a few barges, 50 officers, 582 enlisted men (100 marines included), and 140 dugout canoes.⁴⁶ Hostilities officially ended, without treaty, on August 14, 1842.

B. THE ANALYSIS

1. Hughes' Model Applied

a. Lieutenant Powell's Campaign

(1) Objective. LT Powell's early operations sought to harass and disrupt Seminole activity within the navigable waters along the southern peninsula of Florida. These operations were usually triggered by the threat of Indian attack against settlements and supply bases. Later operations sought to deny the Indians the ability to move along selected waterways so as to prevent their escape into the Everglades.

(2) Means. In response to calls for assistance, Powell conducted limited raids or expeditions against the attacking Indians and their vital resources. His later operations were conducted on specific waterways such as the Jupiter River inlet. These "river blockades" were designed to interdict and impede the Indians' movement towards their sanctuary within Everglades.

(3) Forces. Powell's initial riverine force was comprised of approximately 200 sailors, marines, and soldiers. About one half of these were involved in the assault operations. Personnel were temporarily assigned for a specific operation and upon the completion of which they returned to their parent units and ships. Early operations were conducted with the use of launches, cutters, and some flat-bottomed boats obtained from numerous sources. Later riverine operations were longer in duration and were reinforced by larger ground forces. These operations primarily used the flat-

⁴⁶Dudley W. Knox, *A History of the United States Navy* (New York: G. P. Putman's Sons, 1936), pp. 157-158.

bottomed boat and a small number of canoes for the transport of assault forces. During the operation with Colonel Bankhead, the combined riverine force consisted of about 500 personnel. Upon termination of these operations, all personnel would return to original units.

(4) Level of Control. Early expeditions or raiding operations provided temporary relief from the attacking Indians. Local control was incidental to the duration of the operation. Later operations sought to exploit the mobility of larger riverine forces within specific locations. This provided limited control of selected waterways, however, Powell's ship-based operations and temporary reinforcement of additional soldiers impeded his ability to maintain a waterborne presence in selected locations.

b. Colonel Harney's Campaign

(1) Objective. Colonel Harney's "punitive expedition" was undertaken to harass and disrupt enemy activity within a riverine area, in this case, deep within the Everglades. This raid demonstrated the ability to deliver firepower directly against the enemy.

(2) Means. Harney's riverine forces conducted a raid within the Everglades seeking to destroy the Indians and their vital resources. By using canoes from the Navy's riverine force, Harney was able to attack an enemy encampment not reachable by any other means. Shallow-draft vessels provided the essential mobility necessary for the raid.

(3) Forces. Harney organized a small riverine raiding force of about 90 personnel from his unit, the 2nd Dragoons. This force operated independently from all other forces. The size of this assault force was much smaller than those used in previous riverine operations.

(4) Level of Control. The level of control was local, temporary, and incidental to the purpose of the raid. The raid had a psychological impact upon other Indians who formerly thought the Everglades to be impenetrable by the U.S. forces. Complete control of the waterways within the Everglades was no longer exercised by the

Seminoles. The nature of the operation did not allow the maintenance of a waterborne presence.

c. Lieutenant McLaughlin's Campaign

(1) Objective. The formation of the "Mosquito Fleet" afforded LT McLaughlin the opportunity to devote all available combat potential towards denying the enemy longitudinal movement along waterways within the Everglades. Once the "fleet" units had established an effective "perimeter" around the Everglades, McLaughlin sought to deny the enemy both longitudinal and cross-waterway movement within the interior.

(2) Means. McLaughlin positioned his "fleet" around the southern peninsula of Florida in a three tier arrangement, with mutual support provide within and between each tier. The schooners provided an outer barrier just outside the coastal waters and the gunbarges formed the secondary barrier closer inshore and around coastal islands. Once the fleet established control of all vital points along the coastal waterways, riverine operations commenced to patrol all navigable inland waterways within the Everglades.

(3) Forces. Initially, the Mosquito Fleet consisted of three schooners and associated barges, two gunbarges, a number of flat-bottomed boats, a few canoes, and a landing force of 150 men. As operations progressed in obtaining more area control, the fleet increased to seven schooners with associated barges, three gunbarges, 140 canoes, and an aggregate force of 622 men. By the later stages of the campaign, Army and Navy forces joined up to form riverine "task forces," that conducted operations deep within the interior for periods up to 60 days. They effectively created a waterborne presence. Operations persisted for the duration of the campaign but at a very high cost to personnel and equipment.

(4) Level of control. The formation of the Mosquito Fleet and its subsequent growth provided the means to initially gain temporary control of the longitudinal traffic along the major waterways of the Everglades. Control of the cross-water movement could not be achieved until riverine forces started patrolling the waterways within the interior. Once operations with large riverine forces commenced,

the temporary control of both longitudinal and cross-waterway movement within the Everglades was served.

2. The Elements of the Combat Process

a. Command and Control

Riverine operations were not integrated into the overall campaign plan during the initial years of the war. As with all operations, the absence of a joint unified command structure greatly impeded the ability to join forces and prosecute the war efficiently. Riverine operations were an ad hoc function for the blockade force commander, who would cooperate with an army commander to support the land campaign plan. At times, these coordinated operations resulted in confusion during the execution phase, especially when the Secretary of War directed the riverine force's employment in support of the land campaign. To add to this complex command structure, all naval vessels within the theater of operations did not fall under the operational control of the blockade force commander. The army had operational and administrative control of schooners, barges, and steamships not belonging to the West India Squadron. This condition delayed the effective integration of riverine forces into the overall campaign plan. Fortunately, at the tactical level, cooperation between naval and military commanders resulted in a more favorable employment of riverine forces for specific operations.

(1) LT Powell's Campaign. LT Powell maintained operational control of both personnel and equipment of the riverine force, allowing him to prosecute independent and supporting operations. The decentralized control exercised by the field commander granted Powell authority to meet the needs of the supported commander as he saw fit. Due to communications restrictions of that period, Powell exercised direct tactical control of his forces by positioning himself forward during all operations. While underway, Powell controlled boat formations through visual and audible signals. Effective command and control was dependent upon training and unit cohesiveness.

(2) Colonel Harney's Campaign. Colonel Harney's campaign was exemplary of independent operations not in support of another unit. Once permission was

granted by the field commander, Harney was free to conduct his raiding campaign where and how he saw fit. To maintain control of his small riverine force, Harney placed himself well forward within the formation of canoes. Single file formation (column) with strict noise discipline facilitated command and control of the entire force. Drawing upon personnel from his own regiment, the colonel enjoyed increased control through close unit cohesiveness.

(3) LT McLaughlin's Campaign. Assuming command of the Mosquito Fleet in December 1839, LT McLaughlin acquired operational control of all vessels of the offshore and coastal blockade force. Prior to this, previous commanders had to contend with the control of three separate organizations: the offshore blockade force, the coastal blockade force, and the revenue cutter force under the control of the War Department. For the first time since the beginning of the war, the naval commander could direct all operations within his area of operations, which now included the Everglades. McLaughlin strategically placed his forces to meet the demands of war. The command ship, the schooner *Flirt*, maintained a center position within the Florida Keys whence McLaughlin directed his operations. Establishing a supply base in the Keys, he would also conduct training exercises prior to each riverine operation. During these riverine operations, he would position himself in the lead canoe to personally direct the operations. Granted decentralized control by the field commander, McLaughlin had maximum flexibility to maintain the blockade and continue the "harassment of the Indians" as he saw fit.

b. Firepower

The flintlock musket provided the main firepower element during the Seminole War. The war was known as the "Flintlock War," because the terrain restricted the positioning of artillery against the Indians during land engagements.⁴⁷ The terrain also imposed restrictions upon the firepower for the riverine force. Naval guns provided an additional element of fire power only if the vessel could be brought within range of the

⁴⁷Mahon, p. 325.

enemy. Moisture in waterborne operations within the Everglades made the operation of the flintlock musket susceptible to malfunction and misfire. Innovations were necessary to deliver firepower upon the Seminoles within their riverine sanctuary.

(1) LT Powell's Campaign. The primary firepower element of the early riverine force was the Model 1816, Caliber .69, flintlock smoothbore musket.⁴⁸ A well trained marksman was capable of firing accurately to a range of 100 yards; however, reloading was a timely process (in theory, 3 rounds a minute for the average soldier). The terrain of the Everglades barred the use of the weapon at standoff distances; most engagements occurred within 50 to 100 yards meant that the first volley was usually followed by the traditional charge. Often, the dense vegetation and swamps hindered the commander's control over such assaults.

Naval guns aboard the blockading ships provided the most lethal firepower available to the riverine force. However, the naval gun provided firepower primarily at the periphery of the theater of hostilities. Depending on the draft of the vessels, only limited firepower could be provided for operations on coastal and inland waterways. During the early stages of the war, the decentralized control of all vessels further limited the amount of available firepower. Whereas the Army controlled most of the vessels that operated along the navigable rivers, the Navy's vessels remained in the coastal waters. The following type vessels were utilized in the Seminole War:⁴⁹

Sloop-of-War	18 guns	6-32 pounders
Schooner	1 - 2 guns	6-24 pounders
Steamer	1 - 2 guns	6-12 pounders
Gunbarge	1 - 4 guns	4-12 pounders
Mackinaw boat(flat-bottomed)	1 gun	4-pounder

⁴⁸Ibid., p. 121.

⁴⁹Howard I. Chapelle, *The History of The American Sailing Navy: The Ships and Their Development* (New York: Bonanza Books, 1949), p. 156, 427, 227, 413.

The vast potential for firepower was restricted to the coastal and navigable inland waterways. Beyond the river inlets, the flat-bottomed boat with the 4-pounder was the extent of naval gunfire support. For the interior waterways, this capability was sacrificed due to the need for shallower draft boats. Firepower for riverine operations within the Everglades ultimately rested upon what the individual soldier, sailor, or marine could carry to close with and engage the enemy.

(2) Colonel Harney's Campaign. The primary firepower element for Colonel Harney's operations was still the individual weapon. However, this was no longer limited to the single-shot flintlock musket. Harney and his dragoons are recognized as the first unit in the United States to use repeating rifles in combat. This weapon was the Paterson Colt Revolving Cylinder Percussion Carbine, Model 1836, Caliber .69, seven shot, hammerless, with a 32 inch barrel.⁵⁰ Although the Colt was shunned by most other military officers during the time, Harney recognized its increased firepower. It allowed Harney to reduce the size of his unit but still maintain the same volume of fire. Additionally, the traditional tactic of "volley and charge" gave way to his "irregular" use of continuous and intermittent fire.

(3) LT McLaughlin's Campaign. Unlike his predecessors, LT McLaughlin controlled the naval gunfire support provided by his blockade force, but this was still restricted to coastal waters and navigable rivers. Since McLaughlin preferred the use of the large, ten-man and smaller, three-man canoes, the naval gun mounted on flat-bottomed boats rarely provided fire support for his operations. This placed a premium on the individual weapons of the soldiers, sailors, and marines.

The primary firepower element for later riverine forces was initially the flintlock musket. As in the Harney campaign, LT McLaughlin recognized the advantages of the repeating shoulder weapon. He convinced the Secretary of War to purchase the Paterson Colt Revolving Percussion Carbine, Model 1839, Caliber .47, six

⁵⁰A. Merwyn Carey, *American Firearms Makers* (New York: Thomas Y. Crowell Company, 1953), p. 20.

shot, with a 24.5 inch barrel.⁵¹ This increased firepower allowed McLaughlin to reduce the size of his unit without sacrificing the volume of fire. The potential for continuous and intermittent firepower prompted McLaughlin to divide his riverine forces into smaller independent task units.

c. Scouting

The riverine force depended on its own scouting capability for the conduct of operations. The lack of maps placed a premium upon an intimate knowledge of the countryside.⁵² Intelligence from higher command did not usually provide timely or accurate information. The separation of naval and military command of the coastal and inland water vessels also prevented the dissemination of intelligence to the riverine force commander. The absence of telegraph and rapid courier transit further hampered the dissemination of information to units operating in the immediate area.

(1) LT Powell's Campaign. The riverine force was restricted to information that could be immediately disseminated to the commander. The use of flat-bottomed boats, canoes, and limited foot patrols for scouting the interior waterways was the extent of information gathering activities. This prompted the necessity to enlist the support of local inhabitants, which usually meant capturing Indians or former slaves. Attempting an expedition or an assault into the interior without the assistance of a "reliable" guide resulted in disaster or a futile operation as in the case of LT Powell's earlier operations.

(2) Colonel Harney's Campaign. Colonel Harney put his trust and confidence in the abilities of captured slaves to lead his unit to the Indian encampments. The colonel understood the futility of undertaking an operation deep within the interior without such a capability. The absence of such an essential asset delayed the colonel's raiding operations for over 18 months. Once a guide was obtained, he would exploit

⁵¹Charles Edward Chapel, *The Gun Collector's Handbook of Values* (New York: Coward-McCann, Inc., 1970), p. 285.

⁵²Mahon, p. 129.

every detail of information that could bring his force closer to the enemy. As with LT Powell, the colonel was restricted to the information gathering activities provided by his own resources. Advance scouting parties in canoes were used during the operations.

(3) LT McLaughlin's Campaign. The formation of the Mosquito Fleet under one operational command provided LT McLaughlin with an inherent scouting capability. By merging the schooners and barges together, he established an effective offshore and coastal surveillance system. This became crucial for his forthcoming riverine operations. He dispatched exploring parties along the coast for the development of navigation charts in support of future operations. His extensive use of native guides include the services of a captured Indian leader named Chia, who led many long expeditions into the swamps. Prior to the landing of riverine forces, McLaughlin also dispatched advance scouting parties to conduct reconnaissance. As with Colonel Harney, McLaughlin was very reluctant to conduct operations in the interior without the assistance of a reliable guide.

d. Antiscouting

The movement of riverine forces at night was the most effective means to limit enemy scouting activity. This was a most difficult task to perform especially in unfamiliar territory with vastly changing terrain features. The importance of a "reliable" guide becomes apparent with this activity.

(1) LT Powell's Campaign. Powell conducted night movements but at a high cost of time and energy exerted by his personnel. Moreover the temporary nature of the assignment of forces inhibited the ability to conduct extensive training in night land and water navigation. LT Powell relied upon the services of the Creek Indians and ex-slaves to covertly gather information concerning the Seminole Indians. The use of these agents was limited due to problems with reliability and availability.

(2) Colonel Harney's Campaign. By reducing the number of personnel and relying on swift and stealthy canoes for mobility, the colonel was able to move his force along the Everglades' shallow waterways faster than the previous, larger riverine forces. The low profile of the five man canoe afforded more potential for

concealment in the swamps. Also, canoes traversed the water "quieter" than other vessels.

A canoe force conducting a night movement was the most efficient means of precluding effective enemy scouting. Command and control at night with a small force embarked in canoes was less difficult. Independent operations by one unit diminished the difficulty of the night movement due to stronger small unit cohesiveness. By violating a superior's order, Harney achieved deception by disguising his force as Indians to achieve surprise. This deception proved to be the critical element for success of the raid.

(3) LT McLaughlin's Campaign. LT McLaughlin used various techniques to foil enemy scouting activity. For one, he staggered his ship movements along the coast to confuse enemy scouting. For another, and like his predecessors, he conducted night movements and ensured that noise discipline was strictly enforced. He used ship's sextant to navigate in the swamps by using predominant hummocks as a platform to make observations. During day movements, he dispatched scouting parties in small canoes to provide early warning against a possible enemy counterattack. These parties camouflaged their canoes when patrolling ashore was required. On one occasion, this activity resulted in the ambush of an Indian scouting party embarked in canoes. As with Colonel Harney, McLaughlin used deception prior to his major expedition into the Everglades. After feinting entry into the Everglades from the east, as was past common practice, McLaughlin penetrated from the west while maintaining a holding force along the eastern seaboard. His prior charting of the western waters of the Everglades facilitated this maneuver.

e. Screening

The schooners and barges provided limited protection for the riverine operations along the coast and deeper rivers. While the vessels could deter the enemy from "flanking" the riverine force if within range of the naval guns, the riverine force itself had to depend on its organic firepower to secure its movement deep within the interior.

(1) LT Powell's Campaign. The deployment of small "exploration parties" facilitated safe transit but reduced the speed of the advance. Powell often eliminated screening elements when a guide was employed.

(2) Colonel Harney's Campaign. As is the case with most raids, screening elements can often forewarn the enemy of impending attack by a larger unit. Consequently, the balance between security and surprise had to be considered by riverine forces. Emphasis towards anti-scouting activities prevailed over the emphasis of counterforce. Harney was of the personality to risk that security based upon confidence in the guide and the firepower capability of his riverine force.

(3) LT McLaughlin's Campaign. As stated earlier, the use of the coastal and offshore blockade force ships provided a screening capability for riverine operations conducted in close proximity to the shore. Within the interior, the advance scouting parties and the establishment of ambush sites performed screening and antiscouting functions. With the formation of the Mosquito Fleet, LT McLaughlin's positioning of ships and riverine forces provided a capability to respond to an enemy counterforce.

f. Maneuver

Early riverine operations relied on launches and cutters drawn from the blockade force. Keel barges provided a limited "lift" capability, but they could not operate in the shallow rivers. Riverine operations within the interior depended on the flat-bottomed boats that carried up to 15 armed and equipped personnel. Boat movement was controlled by close formations that allowed a hasty debarkation of personnel to launch an attack. Regular infantry tactics were employed once the force was ashore. Initially a line formation to control both firepower and movement was the standard tactic of the day when an enemy was confronted. The tactics of the enemy prompted a change to irregular "skirmish tactics" that proved more conducive to the nature of the conflict and the terrain. This was similar to that experienced by the British during the Seven Years

War and the American War of Independence.⁵³ Unfortunately for the U.S., the exploits of Rogers' Rangers and Marion's Swamp Foxes were later "frowned upon" by those who felt a need for "well disciplined regulars with a suitable respect for authority."⁵⁴ In addition to skirmish tactics, a night movement was a common technique to approach an enemy position; however, attacks were normally conducted in daylight. Traditional weapons handling procedures and control of a unit's firepower restricted combat to daylight.

(1) LT Powell's Campaign. The movement of the riverine force as one maneuver element was the standard practice during the early war years. Maneuvering in company to battalion size formations were the common practice when trying to engage the enemy. This facilitated the massing of the firepower thought necessary to overwhelm the Indians. The need for quick access to overwhelming firepower drove the requirement for a large riverine force, which proved disadvantageous.

(2) Colonel Harney's Campaign. Colonel Harney chose to maneuver his force as one element towards the intended assault site. The choice to use the canoe and movement in column envisaged lateral dispersion of the force if immediate cover and concealment were required. This formation allowed maximum firepower to be delivered along the flank, the most vulnerable position within the column. Also, column formation allowed for the hasty transit through danger areas. Once debarked, the riverine force immediately attacked the enemy using "irregular" fire and movement tactics without the commander exercising control over the unit.

(3) LT McLaughlin's Campaign. LT McLaughlin's riverine force maneuvered in a variety of ways in the four years that he commanded the Mosquito Fleet. Single axis approach by one force later evolved to the deployment of several forces converging on the same target from different directions. Sweeping missions, flushing

⁵³Robert Leckie, *The Wars of America* (New York: Harper and Row, Publishers, 1969), pp. 44-49. See also Kenneth Roberts, *Northwest Passage* (New York: Doubleday and Company, Inc., 1936), pp. 146-174.

⁵⁴Ellis, p. 53.

missions, and finally large-scale pincer movements highlighted the operations of the riverine force. Favoring the use of the large dugout and smaller canoes, McLaughlin's task forces penetrated the far reaches of the Everglades. Drawing from the strengths of his predecessors, mobility with the "irregular" delivery of firepower, he achieved a tactical advantage over the Seminoles that proved decisive to the outcome of the war.

C. THE ENEMY'S CAMPAIGN

1. Objective

The objective of the Seminole Indians was to harass and disrupt the efforts of the U.S. military to remove them from their homeland. Exploiting the use of the rivers and swamps provided the less numerous Seminoles with an "equalizing element" in their fight against the vast combat potential of the U.S. military.

2. Means

The Indians used rivers to conduct limited raids and ambushes against specific U.S. military forces and supporting supply bases. Operating from within the Everglades, the Indians demonstrated a riverine expertise by sustaining an insurgency within difficult terrain. Until the effective employment of U.S. riverine forces, the Seminoles exploited the use of all waterways within the interior and temporary use of specific coastal and inland waterways.

3. Forces

The Seminoles used units of various sizes to conduct their guerrilla campaign. Initially, large forces were employed to conduct offensive operations against settlements and forts. Once the U.S. commenced the ground offensive campaign, the Indians shifted towards small unit defensive operations which used the tactics of terror, ambush, and the raid. However, the Indians were still capable of launching major operations with riverine forces that numbered as many as 200 warriors.

4. Level of Control

Physical control of the riverine area was not necessary to sustain the insurgency, however, intermittent longitudinal-waterway movement along specific waterways was essential for offensive operations. Likewise, intermittent cross-water movement within the interior was necessary to conduct defensive operations. Mobility was coupled with a detailed and intimate knowledge of the Everglades. This knowledge facilitated a better intelligence [scouting] capability than that of the U.S. These three necessary conditions determined the leading warriors' control of the Seminole Tribes. The tribe provided the essentials for the sustainment of the insurgency: supplies, recruits, and intelligence.

D. THE ENEMY'S ELEMENTS OF THE COMBAT PROCESS

(Those peculiar to the conduct of riverine operations.)

1. Counterforce

The capacity to reduce the effect of the U.S military's firepower. The Seminole Indians created an effective counterforce by wise use of difficult terrain, guerrilla tactics, and Spanish-made rifles. The synergism of these elements provided the necessary firepower to thwart the traditional assault tactics of larger U.S. forces.

a. Defensive Force

The capacity to either destroy attacking weapons or defeat them by "softkill" methods other than shooting them down. The Seminole Nation retreated to the Everglades to affect "softkill" methods by maneuvering to avoid the superior firepower of U.S. forces and sapping its energy. As in the Plains Indian Wars, the environment produced more casualties for the U.S. forces than resulted from actual combat. Of 4,191 U.S. regulars who participated in the war, 350 were killed in action and 1,116 suffered non-battle deaths.

b. Staying Power

The capacity to absorb damage and continue fighting with measurable effectiveness. Four years after the U.S. launched total war against the Seminole Nation, the warriors maintained the capability to launch a major offensive. On August 6, 1840,

the Indians launched an amphibious raid after nightfall over 30 miles of open water. One hundred and thirty-five Seminoles attacked a supply base located on Indian Key Island and repelled the subsequent relief effort. Two barges armed with 4-pounders were turned away after the Indians returned fire with a captured 6-pounder loaded with musket shot.⁵⁵

c. Cover

Secrecy, camouflage, or concealment to avoid attack. The Indians were masters of the use of camouflage and concealment in military operations and in the covert cultivation of basic subsistence. One unique application of concealment in military operations involved the placement of scouts and snipers high in the cypress trees of the swamps. The Indian covered himself with Spanish moss to blend in with the tree and surrounding area. In order to minimize the destruction of vital subsistence, covert crop cultivation areas were scattered throughout the Everglades. These "wild vegetable" plots, separated by patches and swamps, were discovered in previously patrolled territory as late as May 1842. One plot was discovered within a few hundred meters of a U.S. fort.⁵⁶

d. Deception

Deliberate misrepresentation of reality to gain an advantage. The Indians often used numerous peace negotiations to rebuild and reconstitute their combat potential and cultivate crops. Colonel Harney fell victim to this practice when his unsuspecting unit suffered an attack at a trading post.

e. Dispersion

The displacement of units that carry force. The manpower basis for the Seminole Nation were small dispersed family bands or groups. This facilitated a capability to maintain a fluid and flexible combat organizational structure. When required, large strike units were quickly assembled and/or promptly dispersed into small ambush elements to meet the threat posed by U.S. forces.

⁵⁵Jack Sweetman, *American Naval History: An Illustrated Chronology Of The U.S. Navy And Marine Corps* (Annapolis, MD: Naval Institute Press, 1984), p. 47.

⁵⁶Peters, pp. 223-224.

2. Antiscouting

Actions taken to destroy, diminish, or preclude U.S. scouting effectiveness.

Antiscouting activities of the Indians included the use of "one man" camps to lead U.S. forces away from protected areas. This campsite positioned on a small hill facilitated observation of approaching U.S. forces. The practice of forming trails from the river to these campsites would induce U.S. scouts to compromise their activity. Once the scouts were observed, smoke signalling was used to alert the surrounding area. The use of smoke was also used to distract the scouting efforts of the U.S. Conversely, U.S. forces relied upon smoke as a sign of enemy activity. Another means of Indian antiscouting was the removal of wounded or killed warriors during a conflict. This precluded a proper battle damage assessment by the U.S. forces. The most effective means of antiscouting was the specific targeting of U.S. scouts and guides. To this end, the Indians were effective snipers. Seminole defectors were recognized to be the primary intelligence asset for the U.S. forces. This prompted a terror campaign within the Seminole nation to preclude collusion with the U.S. forces, death as the penalty for an Indian who violated this law.

3. Command and Control Countermeasures

Actions taken to defeat or delay the effectiveness of the enemy's command and control. The Indians ambushed message couriers and intercepted mail transports to disrupt the command and control of widely dispersed U.S. forces. Revenue schooners and barges were attacked, thereby disrupting the primary means of communication along coastal and inland waterways. In battle, the Seminoles would employ snipers to eliminate controlling elements of combat units. U.S. officers were favorite targets of this activity.

E. TECHNOLOGICAL INNOVATIONS

The Seminole War occurred during the last days of the Age of Sail. The influence of the naval officers within this war prompted the innovations by those officers who sought a better way to fight the next riverine war.

1. Steam Propulsion

Commander Mayo, LT McLaughlin's predecessor as commander of the blockade force, was a proponent of steamships for riverine operations. Although the early steamers did not perform well, Mayo proposed that two steamships be built with the following specifications: shallow draft of no more than 12 inches, 35 feet in length, and a crew of 30 men for operations up to 30 days. Also required were rifle bullet proof sections that could be attached and removed from the sides. Armament included either a four or six-pounder surrounded by the protective section. Despite LT Powell's earlier successes, Mayo considered the penetration of the Everglades by small riverine forces boats to be futile effort without sufficient firepower, especially naval gunfire support.⁵⁷

2. A Riverine Schooner

As the commander of the blockade force, McLaughlin attempted to increase the firepower of his "fleet." Although he predominantly pursued the enemy with the shallow-draft canoe, he directed attention to improving the effectiveness of schooners. He proposed the following to the Secretary of War:

. . . a fast schooner of sixty or seventy tons which would not draw more than five or six feet of water: it should have a beam wide enough to store a barge in each waist. These barges should draw no more than eight inches, be pulled by ten oars and carry fifteen men. The armament should consist of one twelve-pounder on the schooner and two light swivel guns for the barges.⁵⁸

The result was the schooner, *Phoenix*, which joined the Mosquito Fleet in May 1841. McLaughlin also included recommendations for increased firepower:

. . . six eighteen pounder carronades . . . with Paixhan shot to be used for clearing a hammock or to cover an opposed boat landing, if the occasion arose. (Paixhan is a hollow shot filled with a fused explosive charge. It

⁵⁷Buker, p. 93.

⁵⁸Ibid., p. 72.

is named after a French artillery officer, Henri Joseph Paixhan, who, in 1822, recommended such charges on French warships.)⁵⁹

The 1825 class of 24-gun corvettes were armed with Paixhan shell guns as were later ships such as the *Portsmouth* commissioned in 1844.⁶⁰ Just as the Paixhan shell was introduced to clear a hummuck in the 1840's, the Beehive projective was first used in late 1966 by U.S. troops to clear the jungles of Vietnam.⁶¹

3. Repeating Firearms

The Colt repeating weapons did not gain acceptance by most of the military or naval officers who used them. The weapons were prone to misfire, especially in the damp swamps of the Everglades. Although officers such as Colonel Harney strongly encouraged their use, repeating weapons were not considered appropriate for the basic soldier for another 60 years.⁶²

4. Aerial Observation

An attempt was made to introduce balloons for a reconnaissance capability in the early years of the war. However, the proposal was denied by the field commander, General Armistead, who thought the forest were "too dense for visibility."⁶³

⁵⁹Ibid., p. 118.

⁶⁰Chapelle, p. 438.

⁶¹Dupuy, p. 29, defines - a direct fire, defensive antipersonnel artillery round, it was an advance over earlier canister-type ammunition. The Beehive projectile of the U.S. 105mm howitzer is a canister filled with 8,500 steel flechettes that is fired in a flat trajectory and detonated by a time fuze. At detonation the flechettes fan out, producing a shotgun affect.

⁶²Arcadi Gluckman, *Identifying Old U.S. Muskets, Rifles, and Carbines* (Harrisburg, PA: Stackpole Books, 1965), p. 293-296.

⁶³Mahon, pp. 288-289.

F. CONCLUSIONS

The creation of a riverine force provided the necessary means to deliver firepower against an enemy, who operated in marginal terrain. Unable to destroy the enemy, the riverine force eventually applied its combat power to destroy the Seminole's vital resources. This indirect approach of targeting the Indians' resources was an effective means of coercion.⁶⁴ Direct engagement with the enemy did not usually take place nor did it prove necessary. Instead, concentrating on gaining control over the inland and coastal waters hindered the Seminoles' mobility and aided the U.S.'s prosecution of the war. The key to a successful campaign depended on the riverine force's ability to disrupt the Indian's exploitation of cross-waterway movement within the Everglades.

It took over four years to create a combat force that had the potential to attack the Indian's physical, mental, and spiritual will to wage a long and ruthless war. The development of an effective riverine capability evolved through four years of trial and error. Initially operating from the U.S. Navy's blockade force, LT Powell led numerous boat expeditions, which shifted to interdiction operations on inland waterways against the Indians. The absence of a unified command at the operational level prevented the proper integration of available naval and military resources to exploit this newly founded capability. This limited Powell to raiding operations which initially met with defeat when traditional tactics were applied against a guerrilla foe. However, by the end of his command, LT Powell had increased the combat potential of the riverine force capability.

The combat potential of Colonel Harney's riverine force highlighted the advantages of attacking the enemy with "irregular tactics." This capability was the only effective means of engaging an enemy directly. The raid totally depended on recently acquired information {intelligence} obtained from a Seminole defector. Also, these defectors led forces to the intended objective. The Seminoles quickly adjusted to this intrusion of their sanctuary by improving antiscouting activities. The raiding capability now required an

⁶⁴Cable, p. 6.

adjacent sustainment capability to engage and weaken the enemy's mobility within the Everglades.

Sustained riverine operations did not take place until the advent of the Mosquito Fleet. The fleet integrated all necessary units and resources to conduct year-round riverine operations in conjunction with other military operations. The commander, LT McLaughlin, would "cooperate" with an adjacent commander, Colonel Harney, to exploit the capabilities of both forces.⁶⁵ The nature of the guerrilla war required the integration of a large waterborne presence {clear and hold} with a limited raiding/strike potential {search and destroy}. This unified riverine force capability exploited all the elements of the combat process to strike at the Seminole Indians nerve center. This nerve center[center of gravity] was the Indian society: the people, the village, the crops, and the cattle herds. Author John M. Mahon attributes success to the following:

One ingredient necessary for the destruction of the vital center of Seminole culture was knowledgeable *scouting and guiding*. Many villages, well protected by nature, went undiscovered for years, even though close to white strongholds. These, and the Seminoles' remotest hideaways, might never have been found, except for the *guides* who had lately been with the Indians. Sometimes the guides were Seminoles; more often they were Negroes.⁶⁶

Allied with the Seminoles at first, the runaway slaves defected the Indian cause once the U.S. established a credible capability to coerce. That capability was the mobile riverine force.

The Seminole Indian War required the services of 60,691 militiamen, volunteers, and regulars to fight against 1,200 Indians over a six year period. Only a few hundred of these were believed to be warriors.⁶⁷ At one time, the U.S. deployed approximately

⁶⁵Major General William B. Fulton, *Vietnam Studies: Riverine Operations* (Washington, DC: Department of the Army, 1973), p. 5.

⁶⁶Mahon, p. 324.

⁶⁷Robert M. Utley and Wilcomb E. Washburn, *Indian Wars* (Boston, MA: Houghton Mifflin Company, 1985), p. 133.

9,000 men against the Indians. Of the 4,191 regulars who served, 350 were killed in action, whereas 1,116 died of noncombatant causes - a total of 41 percent. Although approximately 700 Indians were killed during the war, it can not be determined how many were warriors. The actual cost of the Seminole Campaign has been estimated at no less than \$115,032,335.88.⁶⁸ The Navy accounted for the greatest expenditure due to the transport of men and supplies into the theater of operations. Of special note, LT McLaughlin underwent a congressional investigation for suspected mishandling of government funds when purchasing equipment for the Mosquito Fleet. His expenditure of \$343,937.00 was questioned; however, he was later exonerated of any wrongdoing.

Prosecution of the war was notably ruthless. Massacres and atrocities occurred from both sides. A frustrated general stated that "to rid the country of them[Seminole] you must exterminate them." Unable to bring the elusive Indians to battle, generals sought out the guerrillas in operations that would become known as "search and destroy."⁶⁹ After six years of a brutal and costly war, the hostilities ended without treaty. The primary objective of fighting the war - removal of all Seminole Indians - was never accomplished. The U.S. government eventually granted the remaining Indians a "temporary" reservation south of Pease Creek within the Everglades.⁷⁰ Succeeding in asserting their autonomy, the Seminoles remain there today. In 1967, John M. Mahon concludes his *History of the Second Seminole War* with:

. . . the fact that they [U.S. Government] finally were forced to permit a handful of unconquered Seminoles to remain in the Everglades stands as an eternal reminder of the difficulties of combating guerrilla-style operations.⁷¹

⁶⁸Warren W. Hassler, Jr., *With Shield and Sword* (Ames, IA: Iowa State University Press, 1982), p. 115.

⁶⁹Williams, p. 142.

⁷⁰Hassler, p. 115.

⁷¹Mahon, p. 325.

III. RIVERINE WARFARE IN THE MEKONG DELTA: 1966 -1969

A. THE WAR

1. Nature of the Conflict

The war in Vietnam was the setting for America's most intensive riverine warfare experience against an unconventional opponent. As in the Seminole and Civil Wars, the Army and the Navy were not prepared initially. Both services had to merge personnel and resources into a Mobile Riverine Force (MRF) in an attempt to achieve the ultimate objective: pacification of the Mekong Delta. The objective of the Viet Cong (VC) was to challenge the attempts by U.S. and Republic of Vietnam (RVN) forces to solidify political and military control down to the hamlet level. Refusing to yield to pacification efforts, the VC waged an offensive insurgency war in the Mekong Delta.

Encompassing an area approximately as large as the lower Florida peninsula, the Delta was "a strategic prize in the struggle for political control in Vietnam. . . [it] contains a large percentage of the country's population, and is its bread-basket."⁷² The area was inhabited by over six million Vietnamese, who lived in closely spaced rural settlements and worked in the rice fields. The inundated Delta provided the ideal sanctuary from which the VC could wage its guerrilla war. The Viet Cong prosecuted a guerrilla war in the Delta. Prior to the Tet Offensive in 1968, North Vietnamese Army (NVA) involvement in the Delta was restricted to a small advisory and logistic role. By mid-1966, VC strength in the area was estimated at approximately 80, 000 Viet Cong; close to five percent were NVA.⁷³ By 1970, after the VC had suffered heavy losses in the Tet Offensive and following counteroffensive, NVA forces came to comprise 30 percent of the Viet Cong forces operating in the Delta.⁷⁴ From 1966 through 1969, the

⁷²Mekong Delta Mobile Afloat Force 1967 Environment Study. Washington, D.C.: March 1967, p. 25.

⁷³Micheal Clodfelter, *Warfare and Armed Conflicts: A Statistical Reference to Casualty and Other Figures, 1618-1991*, Vol. II, (Jefferson, NC: McFarland & Company, Inc., Publishers, 1993), p. 1239.

⁷⁴*Ibid.*, p. 1293.

MRF contested the Viet Cong with a force of little over 5,000 sailors and soldiers. For three years, the field commanders employed the MRF in different roles in an attempt to wrestle military control of the Delta from the Viet Cong.

2. Evolution of Riverine Warfare

The VC controlled the people at the village and hamlet level. They had immediate access to recruits, intelligence, and supplies. By contrast, political and military control by the central government of Saigon never reached below the district level.⁷⁵ To change this situation, the Saigon government required a strategy that denied the enemy's use of the waterways. Recognizing that the RVN's conventionally trained military forces were incapable of success, the United States established the MRF. For the VC, the Delta became the natural "equalizer" against the regular land force's superior firepower. Operating from the Delta, the VC mounted numerous raids and returned to the safety of this impregnable sanctuary. It took the efforts of a Navy captain and Army colonel to organize a riverine force to bring the battle to the VC.

3. Early Riverine Operations

The United States Navy initiated operation "Market Time" (TF 115) off the coast of South Vietnam, in March 1965. The barrier force intercepted few large shipments; its presence deterred the seaborne NVA infiltration. The blockade was maintained throughout the war, supported by patrol aircraft, destroyers and destroyer escorts, patrol gunboats, Coast Guard cutters, coastal patrol boats, and Vietnamese Navy (VNN) vessels. However, the VC continued receiving war material and assistance from the NVA through Sihanoukville, Cambodia and the upper reaches of the Mekong Delta's waterways. In order to operate in the shallow inland and coastal waters, the Navy purchased shallow-draft "Swift" boats (PCFs). With these craft, the Navy launched operation "Game Warden" in December 1965 in an effort to deny the enemy's use of the waterways. In addition to the Swift boats, the Navy used river patrol boats (PBRs) and helicopters. Like

⁷⁵The administrative structure consisted of the village, district, and province. The province included several districts, which included numerous villages.

the Swifts, the PBR had to be purchased specifically for the river patrol mission. It took two years before the Navy reached its authorized number of PBRs, which at the height of Game Warden, included a force of 220 PBRs and 35 helicopters. Game Warden units were organized into a naval task force (TF 116).

By late 1966, the Viet Cong were operating from the Rung Sat Special Zone (RSSZ) to wage an effective raiding campaign along the water routes connecting Saigon to the sea. The Navy's operations on the periphery of the RSSZ provided only limited support for the land campaign. A completely different and innovative strategy was required. While a member of Naval Advisory Group Vietnam, Navy Captain David F. Welch proposed a concept of operations to General Westmoreland, Commander U.S. Military Assistance Command Vietnam (COMUSMACV). Westmoreland forwarded this idea:

In much the same way that U.S. forces in, for example, the Seminole War and the Civil War had used waterways to facilitate military operations, why could we not create special units equipped to utilize the extensive waterways of the Delta to get at the Viet Cong?⁷⁶

This concept would lay the foundation for an effective strategy that called for the development of riverine forces and tactics. It took six months of building upon available naval assets before the riverine force could fully exploit this unique form of warfare against a guerrilla opponent. In 1966, the Mekong Delta Mobile Afloat Force (MDMAF) concept, shortly renamed the Mobile Riverine Force (MRF), was approved.

4. Riverine Warfare Campaign

In March 1966, COMUSMACV and Commander Naval Forces Vietnam (COMNAVFORV) sought to exploit the waterways through inland amphibious operations, and developed the concept of joining together a naval river assault force and a brigade size ground force. The Army and Navy prepared for deployment of the MRF to the

⁷⁶General William C. Westmoreland, *A Soldier Reports* (New York: Doubleday & Co., 1976), p. 208.

Mekong Delta. The MRF's mission was to "seek out and destroy Viet Cong main and local force units, their resources, and their infrastructure, and to open waterways of the Mekong Delta to commerce."⁷⁷ The first operational elements arrived in theater, established the supporting elements, and launched initial operations in January 1967. In early 1967, Task Force 117, the naval component, and the 2nd Brigade, 9th Infantry Division, the ground component, arrived in South Vietnam as the two combat elements of the MRF. Shortly thereafter, they began operations in the RSSZ. By June 1967, the MRF had engaged in a series of operations in the RSSZ and the Mekong Delta.

TF 117's River Assault Flotilla 1 consisted of converted LCM-6 craft and specially designed Armored Support Patrol Boats (ASPB). The converted LCM-6 included monitors, zippos (monitors with two flame throwers positioned in the bow), hospital craft, LCMs with helicopter landing platforms, armored troop carriers (ATCs), and command/communication boats (CCBs). Floating artillery barges were developed for 105mm howitzers. By June 1967, the TF 117 River Assault Flotilla 1 consisted of two River Assault Squadrons (RAS) was assigned two River Assault Divisions. Each RAS consisted of 26 ATCs, 5 Monitors, and 2 CCBs, and 1 Refueler.⁷⁸ By October the Navy added Armored Support Patrol Boats (ASPBs) to each RAS.

The MRF became a true riverine force in theory and in practice. It included both naval and military elements, which exploited the inland waterways for numerous short duration "search and destroy" operations. During a few operations the MRF attempted to sustain "clear and hold" operations within selected areas for a period up to one month.

Dedicated artillery units and air support increased the MRF's available firepower to fix and destroy VC units. The river assault craft provided the mobility to attack the VC in areas previously impervious to sustained large ground force operations.

⁷⁷Captain Wade C. Wells, USN, (Ret.), "Riverine Operations in Vietnam" in *Full Mission Profile* (Naval Special Warfare professional Publication, 1992) pp. 41-42.

⁷⁸Norman Friedman, *U.S. Small Combatants: Including PT-Boats, Subchasers, and the Brown-Water Navy: An Illustrated Design History* (Annapolis, Md: Naval Institute Pres, 1987), p. 328.

Overall, the MRF's operations can be divided into three phases, with each having fairly distinct characteristics:⁷⁹

Phase I (2 June 1967 to 31 January 1968) included search and destroy operations primarily against VC main and local units in Dinh Tuong and Long An Provinces. A summary of key engagements is provided in Table 1. Figure 2 shows the theater of operations.

<u>Date</u>	<u>Location</u>	<u>Reported VC losses</u>	<u>Reported Allied losses</u>
19 Jun 67	Eastern Cam Giuoc Dist Long An Province	256	74 (US)
28-29 Jun 67	Cam Son area, Dinh Tuong Province	300	149 (VNMC) 38 (US)
14-16 Sep 67	Cam Son area	213	16
6 Oct 67	Cam Son area	100	(Not Reported)
18 Nov 67 (VNMC)	Ciao Duc Dist Dinh Tuong Province	266	Moderate 98 (US)
10 Jan 68	Cai Be Dist Dinh Tuong Province	47	68 (US)

Table 1. Summary of Major Battles: Phase I⁸⁰

⁷⁹The idea for dividing the operations into phases, the included tables, and figures were extracted from Lieutenant Colonel Thomas C. Loper, "The Mobile Riverine Force or the Marriage of the Brown Water Navy and Rice Paddy Army," published study, (Carlisle Barracks, PA: U. S. Army War College, 9 March 1970), pp. 47 - 57.

⁸⁰Ibid., p. 48.

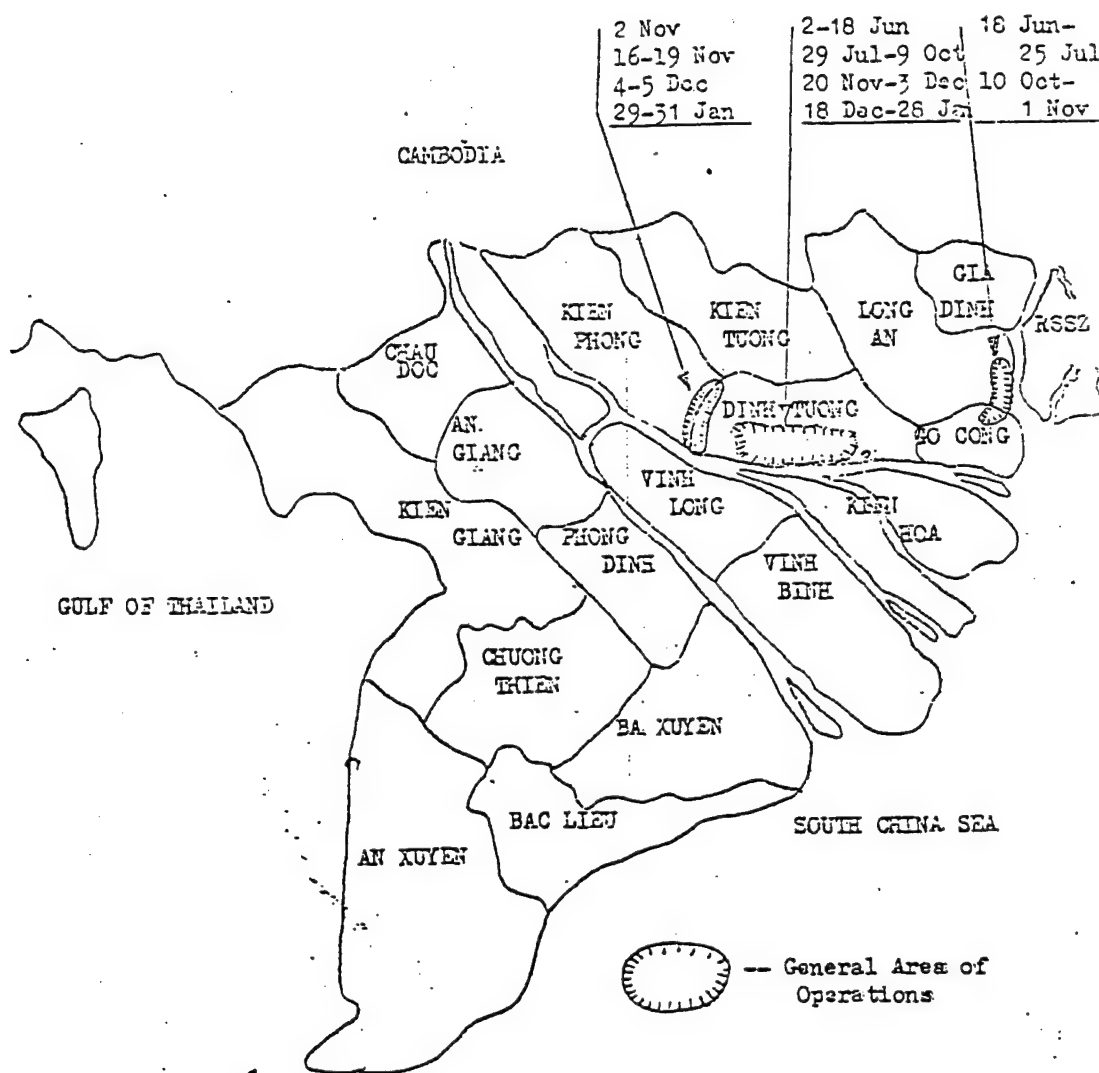


Figure 2. Phase I Area of Operations (2 June 1967-31 January 1968)⁸⁰

⁸⁰Loper, p. 49.

Phase II (1 February 1968 to 8 August 1968) was highlighted by the Tet Counteroffensive and several riverine search and destroy operations into the central Delta. A summary of key engagements is provided in Table 2. Figure 3 shows the area of operations.

<u>Date</u>	<u>Location</u>	<u>Reported VC losses</u>	<u>Reported Allied losses</u>
1-2 Feb 68	My Tho	120	65
4-6 Feb 68	Vic Vinh Long	142	94
14 Feb- 2 Mar 68	Vic Can Tho	321	242
4 Apr 68	Vic Ben Tre	85	205
14 May 68	Vic Mo Cay	57	(N/A)
28 Jul - 7 Aug 68	Cai Be Dist	249	(N/A)

Table 2. Summary of Major Battles: Phase II⁸²

⁸²Loper, p. 52.

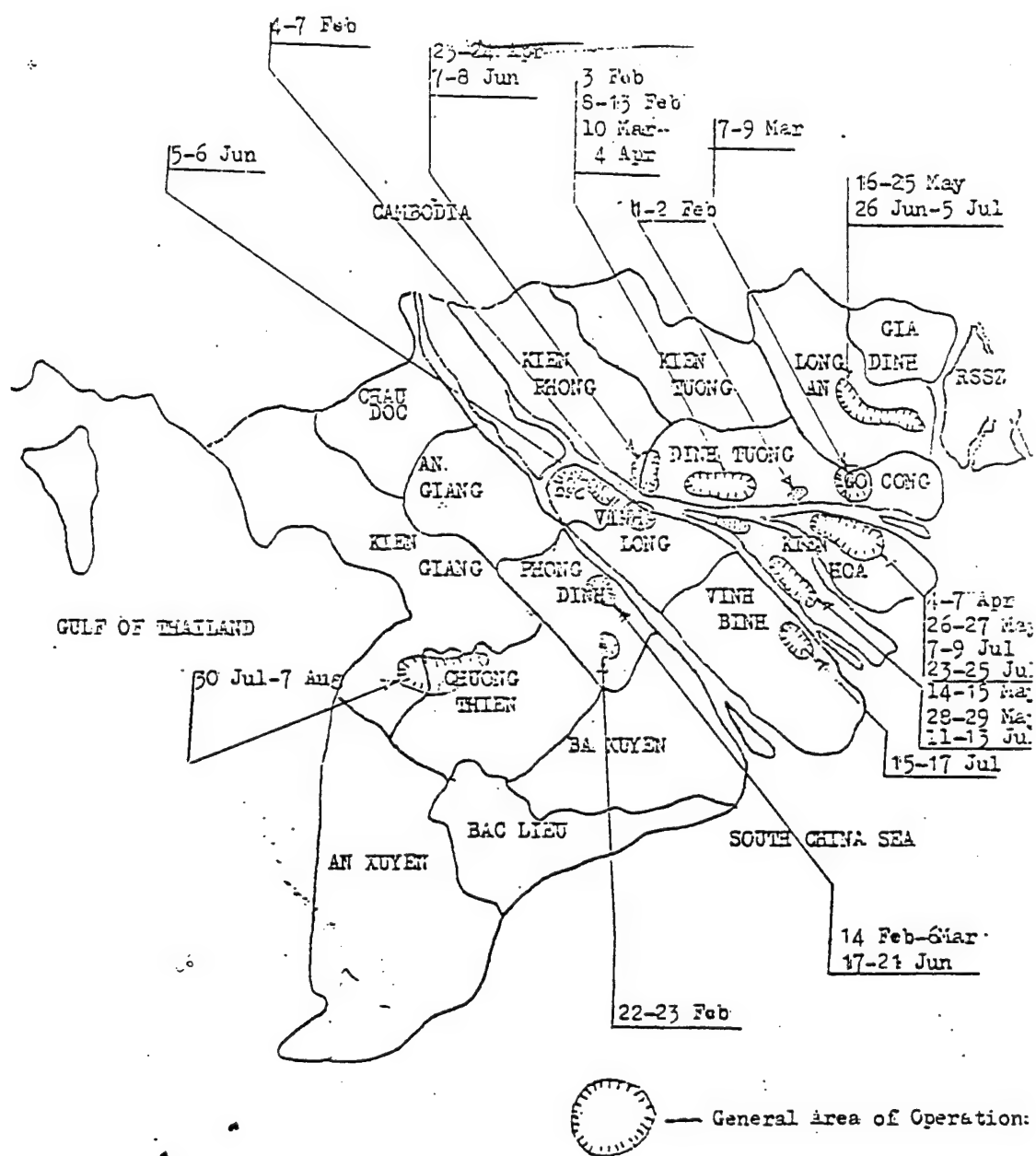


Figure 3. Phase II Area of Operations (1 February 1968-8 August 1968)⁸²

⁸²Loper, p. 53.

Phase III (9 August 1968 to 30 June 1969) found the MRF committed to support the pacification of Kien Hoa Province, which restricted riverine operations primarily to the eastern Delta. Table 3 shows principal engagements. Figure 4 portrays the area of operations.

<u>Date</u>	<u>Location</u>	<u>Reported VC losses</u>	<u>Reported Allied losses</u>
23 Oct 68	Vic Mo Cay	70	13
22-23 Jan 69	(unreported)	50	1
20 Feb 69	Giom Trom Dist	90	19
31 Mar 69	Vinh Binh Province	90	4
20-22 Apr 69	Vinh Bin Province	102	16
21 May 69	Vic Ben Tre	21	3
24 May 69	Ham Long Dist	102	8

Table 3. Summary of Major Battles: Phase III⁸⁴

⁸⁴Loper, p. 57.

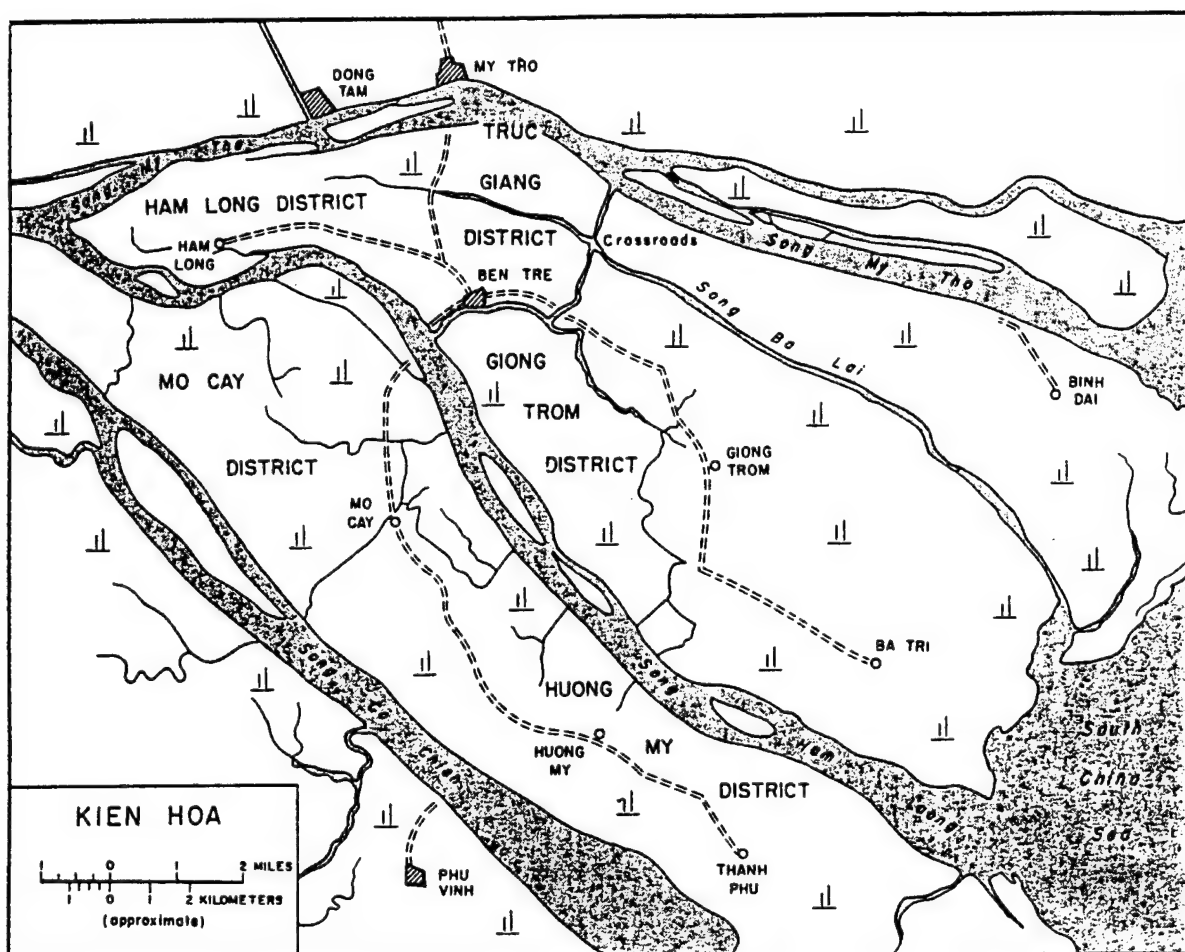


Figure 4. Phase III Area of Operations (9 August 1968-30 June 1969)⁸⁴

⁸⁴Fulton, p. 134.

From 1967 to late January 1968, the MRF primarily conducted strike (search and destroy) operations in the Long An and Dinh Tuong Provinces. Operations usually lasted two to four days with approximately eight operations launched per month. Usually, no more than four 4-day operations could be undertaken each month due to the high rate of immersion foot cases when the troops remained in the swampy areas for any period over three days. Typically, MRF operations employed battalion-size operations up to late April 1967. After that the availability of greater numbers of riverine craft allowed multi-battalion operations. The typical modus operandi was for the river assault craft to transport companies to landing sites, whereupon the units maneuvered to envelop a suspected enemy base area. The riverine craft supported the ground troops with transport, fire, and blocking stations. Also, the river craft repositioned forces to intercept the VC or support other units engaged in an assault.

From February to August 1968, the MRF participated in the Tet counteroffensive and numerous riverine assaults in the central Delta. Beginning in early August, the MRF was expanded and divided into two Groups; Alpha and Bravo. Mobile Riverine Group Alpha was assigned the mission of pacification (clear and hold) in Kien Hoa Province until July 1969. Mobile Riverine Group Bravo pursued operations in the western Delta. Between December 1966 and August 1969, the 9th Infantry Division lost 2,624 killed in action and 18,831 wounded in action, which included the airmobile assaults as well as the riverine force operations.

As previously noted, the MRF pursued two distinct types of operations: search and destroy, and clear and hold. The following two cases provide an in depth look at how each was carried out.

a. MRF Search and Destroy Operations (Phase I/II)

In June 1967, the MRF launched a series of search and destroy operations, under the code names of Coronado I through XI. Most of these operations followed the same pattern. First, the MRF would receive information on the whereabouts of enemy units, usually from Vietnamese units in the province. It then quickly drafted a coordinated plan with participating Vietnamese forces and U.S. units for locating,

immobilizing, and destroying the enemy. Usually, the planning and execution of the operation together took seven to ten days. This required extensive coordination with other U.S. and Vietnamese units, and between the MRF's Army and Navy components. After completion of a mission, the MRF either continued to exploit the available information of enemy activity in the province, or pulled up anchor to shift the Mobile Riverine Base to a new area of operations. The following example focuses on a typical search and destroy mission conducted during Operation Coronado V (12 September - 7 October 1967). It is representative of the MRF's Phase I/II operations.

The MRF had operated in the Dinh Tuong Province on previous operations and knew the location of the enemy's prepared fighting positions. The commanding officer of 2nd Brigade, 9th Infantry Division, Colonel Bert A. David, developed a plan to assault the VC's heaviest fortifications along the Rach Ba Ria waterway in Cam Son area. To keep the enemy from dispersing again, he planned to withhold preparatory artillery fire and limit helicopter overflights until the MRF had cleared the first bend in the waterway. David also decided to delay the overland movement of one battalion from Cai Lay until after the ATCs with two battalions embarked had penetrated the Rach Ba Ria. He placed one heliborne battalion on standby at the Dong Tam base area.

On 15 September, under the cover of darkness, two River Assault Squadrons with the two battalions embarked made their way from the Mobile Riverine Base toward the objective area. Shortly after 0700, they entered the waterway to find heavy vegetation along both banks and a series of tree lines covering the ground inland. The first RAS consisting of 23 craft with one battalion aboard entered the waterway in a standard formation. Two ATCs preceded the column and performed mine sweeping duties ahead of the formation by dragging a chain abaft along the muddy bottom. Next in line came the two monitors to screen the lead mine sweeping element and main body as well as to provide fire support during the landing. Behind the monitors, ATCs carried the assault troops, with one platoon per boat. Directing the formation was a CCB, which maintained position in the center behind the ATCs. The second RAS followed in line behind the first in similar fashion minus the mine sweeping detail.

Navy Lieutenant Commander Francis E. Rhodes, the commanding officer of the lead RAS, directed the river assault formation up the narrow waterway toward the selected landing sites on the east bank. After rounding the first bend in the river, the second RAS remained in position to land at the southern landing sites. Before reaching the upriver landing sites, the lead RAS came under heavy fire from RPG-2 and RPG-7, 57-mm recoilless rifle, automatic weapons, and small arms from prepared positions along the east and west banks.⁸⁶ The MRF returned fire with 20-mm and 40-mm cannons from the monitor, 81-mm mortars from all boats, .50 caliber and M-60 machine guns, and small arms fire. The smoke and chaos of the close ambush separated the lead ATC from the force, after it had pushed past the two temporarily disabled mine sweeping ATCs.

Lieutenant Colonel Mercer M. Doty, one of the battalion's commanding officers, was observing the contact from the airborne command and control helicopter. Seeing the lead ATC had made it to the northern landing site, he ordered the formation via radio to push through the ambush and land the first RAS's ground force at the objective. However, Rhodes thought the RAS could not continue without mine sweeping craft and ordered a withdrawal to the downriver landing sites. Except for the one ATC, the rest of the RAS retired to the southern landing sites. After three hours of reorganizing, resupplying, and evacuating the casualties, the RAS attempted a second pass to reach the northern landing sites. This time, preceded by air and artillery fire, the battalion successfully landed above the ambush site despite continuing heavy enemy fire.

Prior to the second RAS attempt, the other U.S. battalions converged on the enemy's position. The reserve battalion was flown in to set up a blocking position on the east bank. One battalion maneuvered overland from the northeast. The southern RAS remained at the downriver landing sites to block any enemy attempts to escape along the streams. The river assault craft remained in the vicinity to provide fire support and serve as a blocking station in case the enemy attempted to cross. Before nightfall, a fifth

⁸⁶Captain W. C. Wells, USN (Ret.), "The Riverine Force in Action," in Frank Uhlig, Jr., ed., *Vietnam: The Naval Story* (Annapolis, MD: Naval Institute Press, 1986), p. 444.

(Vietnamese) battalion was airlifted onto the west bank to flush out the enemy and provide support.

Throughout the day, the MRF attempted to drive the enemy from its position, but by nightfall had to retire to defensive positions. During the night, the enemy dispersed into small elements and attempted to evade the U.S. and Vietnamese net surrounding their position. Despite a few short engagements, the remaining Viet Cong escaped annihilation and disappeared into the night.

The fighting ended the following morning. After a thorough sweep of the enemy's position, the MRF reported 213 VC dead. The engagement cost 16 US/VN killed and 146 wounded.⁸⁷ During the fierce fighting to reach the northern landing sites, the Navy sustained 3 killed and 77 wounded. Notably, the RAS expended 10,273 rounds of 40-mm ammunition, 16 rounds of 81-mm, 7,445 rounds of 20-mm, 20,934 rounds of .50 caliber, and 40, 216 rounds of .30 caliber from 0700 to 1600 during the fight of 15 September.⁸⁸ This engagement had been the costliest to date for the RAS.

b. MRF Clear and Hold Operations (Phase III)

In 1967, Military Assistance Command Vietnam defined pacification as:

. . . the military, political, economic, and social process of establishing or re-establishing local government responsive to and involving the participation of the people. It includes the provision of sustained, credible territorial security, the destruction of the enemy's underground government, the assertion or reassertion of political control and involvement of the people in government, and the initiation of economic and social activity capable of self-sustenance and expansion. The economic element of pacification includes the opening of roads and waterways and the

⁸⁷The above details were extracted from Major General Robert Fulton, *Riverine Operations*, pp. 128-134, Captain Wade C. Wells, "The Riverine Force in Action," pp. 444-445.

⁸⁸William B. Fulton, *Vietnam Studies: Riverine Operations, 1966-69* (Washington, D.C.: Department of the Army, 1973), p. 134.

maintenance of lines of communication important to economic and military activity.⁸⁹

Prior to 1968, the MRF pursued a search and destroy campaign throughout the Mekong Delta region. Operating from Mobile Riverine Bases (MRBs), the MRF could pick up and move from area to area to avoid establishing a pattern. But the situation following the Tet Offensive changed the tactics of employing the riverine force. In August 1968, the MRF conducted a major search and destroy operation in U Minh Forest, the last large scale strike operation. After returning, the MRF was dedicated to the pacification of the eastern province of Kien Hoa as part of the Accelerated Pacification campaign. The concept entailed stationing one battalion within Kien Hoa near Ben Tre, and maintaining two battalions afloat with the MRB. All three battalions relied on airmobile operations within Kien Hoa.

In February 1968, Westmoreland approved a proposal to reorganize the Mobile Riverine Force. The Navy's TF 117 had grown from two River Assault Squadrons to three by July of 1968, and the Navy decided to form two Mobile Riverine Groups, Alpha and Bravo. Alpha consisted of five river assault divisions, while Bravo received three. Also, the reorganization called for more afloat battalions, which would free up the troops assigned to base defense duties for airmobile operations. By the end of 1968, two brigade headquarters, seven infantry battalions, and a fourth river assault squadron were configured for riverine operations.⁹⁰ In September 1968, three U.S. riverine battalions with supporting artillery elements began search and destroy operations in Kien Hoa Province. The objective was similar to previous operations, but Alpha remained within Kien Hoa to pursue a waterborne presence strategy rather than an incidental raiding strategy. Bravo remained across the river at Dong Tam to support other operations.

⁸⁹Harry G. Summers, Jr., *Vietnam War Almanac* (New York: Facts on File Publications, 1985), p. 276.

⁹⁰Fulton, p. 171.

Mobile Riverine Group Alpha was assigned the pacification operation, which lasted from September 1968 until the announced withdrawal of the 2nd Brigade, 9th Division in June 1969. In Kien Hoa, the enemy adjusted to the presence of the MRF. The VC relied on small unit ambushes against the river assault craft which by June 1969 were continuously conducting assault landings, cordon and search, troop sweeps, ambushes, blocking, escorting, and defoliation missions, and some psychological warfare and medical civic action programs.⁹¹

During the Kien Hoa pacification operation, the MRF shifted from operating in easily relocatable MRBs to the vicinity of Kien Hoa that included only four suitable anchorages. This changed the nature of its operations. The enemy knew the location of the MRB and frequently ambushed its limited approaches. VC swimmers and sappers successfully mined the LST USS *Westchester County* and a Navy salvage craft. In the first instance, the LST was at anchor in the My Tho River along with the other vessels of Group Alpha when a mine caused extensive damage, killed 25 and wounded 27. In the second instance, the salvage craft was sunk on the Ham Luong River, resulting in two dead and 13 wounded. Water mines and RPG-2 and RPG-7 were the VC's weapons of choice due to their lethality and lighter weight than the recoilless rifles.

To counter the swimmers and sappers the MRF improved base defenses. Nets, concussion grenades, and hull inspections by Underwater Demolition Team personnel were emphasized. Elements from the MRF launched cordon and search operations to round up suspected guerrilla members and supporters. One such operation targeted swimmers and sappers on an island south of Dong Tam in the My Tho River. The operation included 24 MRF river assault craft with two infantry battalions, eight river patrol boats, plus VNN units. The local island inhabitants were moved temporarily to three collection points, screened by the National Police, and issued new identification cards. The River assault craft and patrol boats assumed blocking stations around the

⁹¹Fulton, p. 178.

island as the infantry swept it for VC units. At the end of the operation on 7 January 1969, a total of 70 Viet Cong had been apprehended.⁹²

In February 1969, the VC frequently ambushed the River Assault Divisions operating around Ben Tre. At the end of the month, enemy SCUBA divers attempted two consecutive attacks upon an LST at anchor in Dong Tam across the river and to the North of Kien Hoa province. Each time, the crew used concussion grenades to thwart the attacks. VC ambushes continued throughout the duration of the river assault operations in Kien Hoa. By early July 1969, the remaining U.S. River Assault Divisions provided base defense security for Dong Tam and operated with Vietnamese units. In August 1969, River Assault Flotilla One was disestablished, and the craft of the River Assault Divisions were turned over to the Vietnamese Navy. The remaining river assault craft participated in "SEA LORDS" operations. SEA LORDS integrated elements from the Navy's Task Force 115, 116, and 117 under one operational command (TF-194). Assets from TF 117 were reorganized into smaller units and mixed with other PBRs and PCFs to conduct barrier, strike, and pacification operations along the Cambodian border and on the Cau Mau Peninsula.

The clear and hold operations were characteristically different from search and destroy operations. For one, the riverine forces often operated in smaller units (6 to 10 river craft) throughout the area. In addition, they pursued a waterborne presence through frequent routine patrols, night ambushes, and cordon and search operations, as well as limited search and destroy missions. From the summer of 1968 until October, the MRF operated without air support, which forced a heavier reliance on the organic fire support of the riverine assault craft. The overall effect of the MRF's continuous presence was aided by the coordinated efforts of the Vietnamese ground forces in Kien Hoa. Together, the MRF and Vietnamese forces contested the VC's control over a province which once boasted that it was the birth place of the communist NLF.⁹³ In 1967 the VC

⁹²Fulton, p. 174.

⁹³Mekong Delta Mobile Afloat Base Information Brief, "Political Implications of Military Operations in the Delta (IV Corps)," dated 27 September 1966, p. 2.

in Kien Hoa numbered 12,000; in 1969 their numbers fell to 9,000; and by 1971 the VC numbered only 2,000.⁹⁴

Despite the apparent success of maintaining a permanent waterborne presence within Kien Hoa for an extended period, the Army still continued the practice of search and destroy tactics as the more important objective. Following the Tet Offensive, the Army became less enamored with riverine operations, and by July 1968 decided to rely more on airmobile operations for search and destroy missions. This led the 9th Infantry Division to redeploy its riverine battalions in July 1969 prior to the airmobile configured brigades. The Navy's TF 117, left without ground forces, turned over most of its 178 river assault craft to the VNN.

B. THE ANALYSIS

1. Hughes' Model

a. Mobile Riverine Force Strike Operations (Phase I/II: June 1967 to August 1968)

(1) Objective. To harass and disrupt VC activity within the Mekong Delta.

(2) Means. The MRF conducted search and destroy missions against VC main and local forces and their base areas within the Delta region. The riverine force operated from Mobile Riverine Bases that usually moved to a new area of operations every two weeks.

(3) Forces. The normal force complement used to conduct search and destroy operations, as outlined in the case example, included two River Assault Squadrons with two battalions embarked. TF 117 had 100 river assault craft by June 1967, and 178 by October 1968. Also, other brigades from 9th Infantry Division usually contributed one reserve battalion, and the Vietnamese often added one to two battalions. These additional forces relied on vehicles and helicopters for mobility. In terms of personnel, the MRF included approximately 3,000 sailors and 2,200 soldiers configured

⁹⁴Clodfelter, p. 1264.

for riverine operations. During the summer of 1968, the Army increased the number of troops configured for riverine operations to three maneuver battalions.

(4) Level of Control. The intended level of control was local, temporary, and incidental to the purpose of the operation: destruction of the Viet Cong units and their base areas. From 1967 through January 1968, the MRF inflicted heavy casualties upon the VC main and local forces. The enemy's exploitation of the waterway was disrupted. However, lacking a permanent waterborne presence, the MRF could not deny the enemy's exploitation of the Mekong Delta's waterways.

b. MRF Clear and Hold Operations (Phase III: August 1968 to July 1969)

(1) Objective. The MRF attempted to deny the enemy longitudinal and cross-waterway movement along the numerous waterways surrounding and within the Kien Hoa province.

(2) Means. The MRF established its Mobile Riverine Base at Dong Tam across the My Tho River from Kien Hoa Province. It conducted frequent and continuous operations along the waterways surrounding and criss-crossing the province. Small unit operations included patrols, raids, ambushes, sweeps, blocking missions, some psychological warfare operations, and convoy protection.

(3) Forces. The MRF placed one battalion ashore in Kien Hoa and positioned two battalions afloat to maintain continuous presence missions for over one year. It operated with five River Assault Divisions, three U.S. battalions, and one Vietnamese Marine Corps battalion. The MRF supported the Kien Hoa ground forces engaged in pacification operations.

(4) Level of Control. The MRF's control of the riverine area was continuously contested by the VC throughout the pacification efforts in Kien Hoa. Control was far from established.

2. The Elements of the Combat Process

a. Command and Control

The commander of III and IV Corps Tactical Zones (Commander, II Field Force) integrated Mobile Riverine Force operations into the land campaign. The RVN forces coordinated operations with the MRF. ARVN maintained operational control of its battalions assigned to strike operations with the MRF. The U.S. Senior Advisor for IV CTZ also coordinated operations between the U.S. and Vietnamese forces.

At the Task Force level, there was no unified operational command structure. The 2nd Brigade, 9th Infantry Division fell under the administrative and operational control of 9th Infantry Division Commander. The Navy's River Assault Flotilla One (TF 117), which consisted of two River Assault Squadrons, fell under administrative and operational control of the Commander Naval Forces Vietnam (COMNAVFORV). However, COMNAVFORV directed TF 117 to work closely with and support MRF operations. Although the command structure did not formally unify the riverine force under one operational commander, this was overcome by cooperative working relationships between the naval and military component commanders.

(1) MRF Search and Destroy Operations. The River Assault Squadrons operated in support of the Army's 2nd Brigade. The Army was responsible for the conducting tactical operations, coordinating fire support, base defense, and establishing liaison with Vietnamese officials. The Navy supported Army operations, assisted in base defense, provided escort and transport for waterborne movements, and provided logistic support.⁹⁵

During waterborne movement, the Navy River Assault Commander exercised control over the formation through a column formation. The Command/Communication Boat with the Assault Commander embarked directed the spacing and rate of advance from the rear. Once ashore, the ground force commander

⁹⁵John Forbes and Robert Williams, *Riverine Force: The Illustrated History of the Vietnam War* (New York: Bantam Books, 1987), p. 90.

coordinated the movement of troops and craft from a helicopter circling the area of operations.

Tactical control during operations benefitted from the heliborne command posts. The helicopter could rise above the fray and maneuver the elements to envelop the enemy. The commander directed both the naval and military units actions, despite not being officially granted the authority over supporting naval assault craft.

The airborne commander could maneuver the riverine force quickly, but the slow speed of the assault craft limited the riverine forces' capacity to reposition its forces quickly. Nevertheless, the riverine assault craft were essential for extraction and reinsertion of troops when helicopters were not available for troop lift or could not find suitable landing sites. At ground level, control was maintained through radio communications and pre-planned contingencies. The fluid process of combat did create confusion for ground commanders, but the control procedures limited response time. The larger the force, the longer it took to maneuver.

(2) MRF Clear and Hold Operations. The 9th Infantry Division Commander integrated the MRF into his pacification efforts by concentrating their efforts in Kien Hoa. Control became decentralized as units increasingly operated in smaller elements to adjust to enemy tactics. The lack of air assets from the summer until October of 1968 forced the force element commanders to rely on controlling the units from afloat and ground positions.

b. Firepower

Superior U.S air power provided the main firepower advantage during the Vietnam War. The war was known as the "helicopter war." The varied terrain and limited overland lines of communication led the U.S. to rely heavily on the helicopter for maneuvering forces and delivering firepower against the VC and NVA. The inundated and vegetated terrain of the Mekong Delta along with a large rural population also imposed restrictions on the MRF's firepower. Moisture in waterborne operations within the Delta made the operation of the individual and crew served weapons susceptible to malfunction and misfire.

(1) Search and Destroy Operations. The MRF employed three means to deliver direct and indirect firepower: air, ground, and waterborne. Operations primarily relied on the mobility and destructive power of close air support provided by helicopter gunships. Dedicated artillery elements allowed the MRF to call in preparatory and direct fire support. Organic firepower centered on the river assault craft and ground troop weaponry. The river assault craft used a variety of weapons, depending on the mission of the craft: the monitor had a direct fire 81-mm mortar, 40-mm and 20-mm automatic cannons, two .50 caliber machine guns, and two Mk 18 grenade launchers. The CCBs possessed a 40-mm cannon, while the ASPB relied on an 81-mm mortar, a 20-mm cannon, a twin .50 caliber machine gun, and two or more MK 18 grenade launchers. The supporting floating artillery delivered 105-mm fire, and close air support relied on predominantly helicopter gunships and attack helicopters. When feasible, fixed-wing aircraft strikes added to the destructive capacity of riverine operations.

The supporting fire from aircraft, especially helicopter gunships inflicted heavy casualties upon exposed enemy, and destroyed fortified positions. Artillery served the same purpose, but did so less discriminately. The enemy recognized their vulnerability to American firepower, and tried to separate the U.S. fire support from the supported unit.⁹⁶ The closer the VC could get to the MRF, the better it fared in separating the force from its fire support.

The riverine force attempted to overcome its vulnerability to close engagements by increasing the organic firepower and survivability of the river assault craft. A tradeoff between protection, speed, draft, firepower, and armor led to a composite force of river assault craft. Overall, the MRF relied on the rate of delivery and volume of superior firepower to destroy the enemy. Maneuver centered on fixing the enemy against a blocking position where supporting fire it was hoped could do the work of close combat. The American style of warfare -- offensive, attrition based warfare --

⁹⁶Robert H. Scales, *Firepower in Limited War* (Washington, D.C.: National Defense University Press, 1990), p. 74.

became too enamored with its ability to project firepower into the swampy and inundated rice paddies of the Mekong Delta.

(2) Clear and Hold. Except for the period between the summer of 1968 through October, the MRF had air and artillery fire support available. The MRF operated in gradually smaller units and thus dispersed its firepower. As a result, the vice of massed firepower became less frequent, forcing a shift in tactics with greater reliance on stealth (eg. night operations, ambushes).

c. Scouting

(1) Search and Destroy Operations. Scouting was emphasized as essential to the success of strike operations. Lieutenant General Julian Ewell, commanding general of the 9th Infantry Division, emphasized that intelligence had to be exploited immediately due to the rapidly changing situation within the area of operations.⁹⁷ The MRF gathered information from overflights, other units, captured VC, VC defectors, and, most important, the local Vietnamese forces and villagers. Critical scouting activity still centered on gaining information from people and not from new technology based systems.

In theory, the electronic sensors, air overflights, radar, and night vision devices apparently offered the MRF an advantage over the enemy. In fact, vital information, such as enemy base areas and activities, could only be gained through the local people. Since the enemy relied on basic means to communicate and move within the Delta, the MRF was required to rely on Vietnamese sources to provide the necessary information to launch an operation. If not, a strike operation risked becoming an armored reconnaissance operation instead.

Before launching a mission, information was collected through aerial reconnaissance and by military intelligence units. During the movement to the objective area, the helicopters scoured the countryside to provide the MRF with the latest information. In several instances, chance sightings of Viet Cong forces led a commander

⁹⁷Senior Officer Debriefing Report: LTG Julian J. Ewell, CG, 9th Infantry Division, Period 25 February 1968 to 5 April 1969, of 24 November 1969, p. 3.

to immediately adjust landing sites to maximize the chance of enveloping and destroying an enemy unit.

During sweep and assault operations, captured enemy soldiers gave information needed to track enemy locations and their modus operandi within the provinces. Amnesty programs targeting VC members aided the riverine force by providing local knowledge of enemy activities, routes of movement, and base areas.

The U. S. employed sensors to detect enemy movement within sectors during the SEA LORDS barrier operations. Electronic sensors could determine movement during curfews in or around base areas or selected patrol sites. However, without visual confirmation it was impossible to determine if friend or foe was involved. Accordingly, the decision to engage could only be based on the assumption that all villagers were observing the curfew.

(2) Clear and Hold. The main difference between search and destroy and clear and hold operations centered on the relative availability of intelligence. When the MRF maintained a permanent presence in Kien Hoa, it could establish an intelligence network with the local units and people. Since the threat to the MRF generally came from "hunter-killer" team ambushes and swimmer and sapper mining in the Kien Hoa area, local information was essential for locating enemy units or thwarting guerrilla harassing operations. By placing one battalion ashore, the MRF exploited the indigenous intelligence network for various operations.

As the MRF shifted to small unit tactics, it began to frequently practice night operations and ambushes - tactics learned from the enemy. Enemy defectors and friendly villagers provided the best source of information on likely enemy activity and crossing points. Technology increased the MRF's capability to operate at night. Night vision devices improved the chance of detecting enemy movement along the waterways. Additionally, a shift in tactics led to small elements, such as sniper teams and small ambush/recon teams, to provide information on enemy activity in selected areas. The clear and hold scouting techniques heavily relied on human intelligence. These

provided the MRF commander with information on enemy positions and thus he could bring his dispersed firepower together when the enemy could be located.

d. Antiscouting

(1) Search and Destroy Operations. Shifting of the MRB at night and over great distances allowed the MRF to keep the enemy off-balance. The MRF moved at night to objective areas so to limit the VC's ability to locate its destination. Additionally, false insertions kept the enemy guessing as to the exact location of real troop landing sites. However, the large size of strike operations obviated any effective means of foiling the enemy's scouting capability. Stealth was always foiled by the noise of approaching craft and the size of units engaged in operations.

(2) Clear and Hold Operations. The MRF's "permanent" presence in the area allowed the enemy to study its operational pattern. This forced a repeated change in tactics to keep a measure of initiative. The MRF gradually shifted to stealth and copied the enemy's small unit tactics. However, the noisy engine powered craft always gave the enemy plenty of warning of approaching MRF elements.

e. Screening

(1) Search and Destroy Operations. Air cover was vital in screening the movement of riverine forces to the objective area. The MRF's ASPBs and Monitors provided close in screening for the formation. During landings, air, artillery and assault craft fire peppered likely ambush sites.

(2) Clear and Hold Operations. Smaller units relied more on stealth than screening. When the helicopter assets were removed from supporting the MRF for a four month period, the riverine force had to rely solely on river craft for screening. However, the MRF recognized the importance of maintaining a frequent presence along the banks to screen waterway movement. Therefore, units frequently set up ambushes and conducted night sniper operations to harass enemy movement in the area.

f. Maneuver

(1) Search and Destroy Operations. The MRF relied on a column formation to control movement to the objective. Screening elements were placed fore and aft of the column. Command and control elements afloat positioned themselves in the center. The ground force commander usually remained airborne in a helicopter. At the objective area, the MRF relied on maneuver battalions to locate, fix, and destroy an enemy. Only by sealing off the enemy within an area, could the MRF call in supporting fire to destroy the VC units. Frequently, airmobile battalions worked with the MRF to envelop a suspected enemy position. Once contacted, the MRF maneuvered elements and craft to block likely avenues of escape. However, the enemy was often able to disperse by withdrawing along the numerous shallow canals which could not be blocked by the MRF craft.

(2) Clear and Hold Operations. The MRF positioned forces within Kien Hoa to defend the provinces' villages and people. However, it still continued to conduct limited search and destroy missions when the enemy threat warranted such actions. The dispersed positioning of MRF elements kept the riverine force from immediately massing firepower against an enemy threat.

C. THE ENEMY'S CAMPAIGN

1. Objective

The objective of the VC was to harass and disrupt the efforts of the U.S. military to "pacify" the IV Corps area in order to continue control of the areas and its population. The Mekong Delta geography provided an "equalizing element" for the less numerous VC in their fight against the vast combat potential of the U.S. and ARVN forces.

2. Means

The VC used the riverine area of the Delta to sustain and expand its offensive insurgency. The region water routes were used to transport war supplies, and conduct raids and ambushes against specific U.S. and ARVN forces and their supporting supply bases. Operating from the periphery and within the Delta, the VC demonstrated a riverine

expertise for sustaining an insurgency in difficult terrain. Until the effective employment of U.S. riverine forces, the VC exploited the use of all waterways.⁹⁸

3. Forces

The VC used units of various sizes to conduct their guerrilla campaign. Initially, battalion-size forces were employed to conduct harassment operations against U.S. and ARVN forces and supply bases. When U.S. forces embarked on search and destroy operations, the VC shifted toward small unit operations that used the tactics of terror, ambush, mining and the raid. However, as demonstrated during the Tet Offensive, the VC could still launch major operations with battalion-size forces.⁹⁹

4. Level of Control

Permanent control of the riverine area was not necessary to sustain the insurgency. However, intermittent longitudinal waterway movement along specific waterways was essential to conduct offensive operations such as raids and ambushes. Similarly, intermittent cross-water movement within the interior was vital to transport war supplies. This mobility depended on a detailed knowledge of the Delta and an intimate relationship with the local people. Information gathered from the local people provided a better intelligence [scouting] capability than that of the U.S. and ARVN forces. These three necessary conditions depended on the VC control of the hamlets and villages. The people provided the essentials for the sustainment of the insurgency: supplies, recruits, and intelligence. Success depended on all factors working together in what was in effect an interlocking campaign plan.

⁹⁸Victory Daniels and Judith C. Erdheim, "Game Warden," Center for Naval Analyses, Arlington, VA, January 1976, p. 50.

⁹⁹Lieutenant Colonel Thomas C. Loper, *The Mobile Riverine Force or The Marriage of the Brown Water Navy and the Rice Paddy Army* (Carlisle Barracks, PA: U.S. Army War College, 1970), p. 50.

D. THE ENEMY'S ELEMENTS OF THE COMBAT PROCESS

1. Counterforce

The capacity to reduce the effect of the U.S military's firepower. The VC created an effective counterforce by maximizing the use of difficult terrain, guerrilla tactics, and Soviet/Chinese-made weapons. The synergism of these elements provided the necessary firepower to disrupt and harass the attrition based tactics of the larger U.S. and ARVN forces. As an illustration, the VC/NVA inflicted the following combat losses to U.S. helicopters:¹⁰⁰

<u>Year</u>	<u>Combat Loss</u>
1966	128
1967	280
1968	560
1969	521
1970	431
1971	224
1972	128
1973	4

a. Defensive force

The capacity to either destroy attacking weapons or defeat them by methods other than destruction. The VC used the Mekong Delta to limit the opponent's superior firepower and to sap its energy. The biggest threats to riverine forces were ambushes, mines, and raids by swimmers and sappers. Individual VC craft engaged River Patrol forces with small arms and automatic weapons. Some units reported the use of

¹⁰⁰Clodfelter, 1290.

"suicide sampans" where craft would damage allied vessels with self-destruct charges. As with previous guerrilla wars in marginal terrain, the harsh environment of the Delta produced numerous non-battle casualties for the U.S. and ARVN forces. As Michael Clodfelter highlights:

Casualties to the enemy bullets in the Delta were often eclipsed by casualties to immersion foot (similar to trench foot, caused by near constant immersion of the foot in muddy water). Later, among U.S. units operating in the Delta, the percentage of military personnel suffering from immersion foot in any given unit out on a combat or patrol mission rose from an average of 3 percent on the first day of the operation to 11 percent on the second day, 15 percent on the third, 20 percent on the fourth, and to 35 percent after 5 days in the paddies, canals, and mangrove swamps of this wet region.¹⁰¹

(1) Mining. Command detonated minings were usually attempted when the riverine force was departing to undergo a mission, to impede its assault capability. Mining operations were normally planned to support ambushes. The use of large command-detonated mines was coordinated with small arms, automatic weapons, rocket-propelled grenades (RPGs) and recoilless rifle fire. During one seven-day operation, the riverine force was attacked eight times resulting in one ATC sunk by a waterborne mine on the Song Cai Tu River.¹⁰²

(2) Ambushes. These operations were usually conducted in daylight and at low tide. As with mining, ambushes were frequently made possible by the predictability of the MRF's route. Riverine forces were drawn into narrow channels where maneuverability was difficult. Harassing fire from one side of the river would draw the waterborne force to the opposite bank where the main enemy element would launch the ambush.

(3) Raids. The VC raided isolated outposts inside the Delta to show the people the vulnerability and weakness of the U.S. and ARVN forces.

¹⁰¹Clodfelter, p. 1239.

¹⁰²Fulton, p. 175.

Additionally, the VC used swimmers and sappers to damage the mobile riverine base and associated vessels. In November 1969, the LST USS *Westchester County* was severely damaged while at anchor. Three assault craft and two helicopters were also damaged during this incident.¹⁰³

b. Staying Power

The capacity to absorb damage and continue fighting with measurable effectiveness. In the aftermath of the Tet Offensive, General Giap cited the VC's willingness to accept huge sacrifices:

. . . every minute, hundreds of thousands of people die all over the world. The life or death of a hundred, a thousand, or tens of thousands of human beings, even if they are our compatriots, represents really very little.¹⁰⁴

One year after the Tet Offensive, the VC maintained the capability to conduct river ambush tactics in the Delta. From February to September 1969, one "hunter-killer" team succeeded in ambushing and sinking 15 ATCs on the Vam Co Tay River, Binh Phuoc District, Long An Province.¹⁰⁵

c. Cover

Secrecy, camouflage, or concealment to avoid attack. The VC were masters at the use of cover and concealment in military operations and in the covert storage of war supplies. One unique application was the use of tunnel warfare. The tunnels served as assembly areas, storage depots, and hospitals, and they supported military operations in the movement of forces in the otherwise open terrain. Tunnels along the Song Sai Gon River were used as base areas to launch attacks against the

¹⁰³Ibid., p. 172.

¹⁰⁴Anthony James Jones, *Modern Guerrilla Insurgency* (Westport, CT: Praeger, 1992), p. 145.

¹⁰⁵SP5 Charles T. Williams, "River Ambush Tactics," Department of Defense Intelligence Information Report, Report Number: 6 029 0812 70, dated 8 August 1970.

capital city of Saigon.¹⁰⁶ The superb use in camouflage of personnel, weapons, and watercraft enhanced the mobility of the VC within the Delta region.

d. Deception

Deliberate misrepresentation of reality to gain an advantage. Deception was a major asset for the VC. The nature of the war allowed the VC to blend in with the people which enabled the overt and covert use of the waterways. When transporting goods in the river, the VC often disguised themselves as civilians, and carried stolen or forged identification papers. War supplies were hidden within difficult to move bulk items such as rice, sugar cane, and fish. False bottoms, bulkheads, and overheads of junks were common contraband areas. The VC often used the time during numerous ceasefires to rebuild and reconstitute its combat potential, including the acquisition of supplies, recruits, and intelligence. The U.S. and ARVN forces fell victim to this practice when unsuspecting units suffered huge losses from surprise attacks during the Tet Offensive.

e. Dispersion

The displacement of units that carry force. The VC dispersed units to form an infrastructure within the hamlets and villages of the Delta. Within the Delta region, small units restricted their operations to the local area for the transport of supplies. Seldom did one unit transport supplies from the original point of entry to its destination. The same principle was used for the conduct of raids and ambushes. This developed a capability to maintain a secure, fluid and flexible combat organizational structure. When required, large strike units were quickly assembled and/or promptly dispersed into small ambush elements.

2. Antiscouting

Actions taken to destroy, diminish, or preclude U.S. scouting effectiveness. The VC minimized its predictability of cross-water traffic by not staging watercraft in vicinity of the specific site. Using the resources of nearby villages, the VC used sampans as the

¹⁰⁶Summers, pp. 344-45.

primary means of cross-water traffic. Small unit movement was restricted to 4 or 5 men per sampan travelling in pairs. An elaborate warning system was developed by using colored lights, gongs, bells, and gunshots. The use of "decoy gunfire" was used to distract the scouting efforts of the U.S. As was the practice, U.S. forces relied upon gunfire for the detection of enemy activity. Before making a crossing, VC snipers fired upstream or down stream to lead patrols away from the intended site.¹⁰⁷ Another means of VC antiscouting was the removal of wounded or killed warriors during an engagement. This activity precluded a proper battle damage assessment by the U.S. forces for the notorious "body count." As noted by author Anthony James Joes, no one wants to remember Clausewitz':

Casualty reports on either side are never accurate, seldom truthful, and in most cases deliberately falsified . . . that is why guns and prisoners have always counted as the real trophies of victory.¹⁰⁸

The most effective means of antiscouting was the specific targeting of U.S. CCBs. Thus, the VC practiced "riverine sniping." The VC recognized defectors and GVN sympathizers within the hamlets and villages as the primary intelligence[scouting] asset for the U.S. and ARVN forces. This prompted a terror campaign in an effort to deter collusion with U.S. and ARVN forces. Torture and death were the penalty for the individual who violated this "law."

3. Command and Control Countermeasures

Actions taken to defeat or delay the effectiveness of the enemy's command and control. The VC ambushed personnel and supply transports to disrupt the lines of communications between U.S. and ARVN forces. These attacks also disrupted the primary means of communication with the local and popular forces of the hamlets and villages. In battle, the VC employed sniper tactics to eliminate controlling elements of

¹⁰⁷Daniels and Erdheim, pp. 10-12.

¹⁰⁸Joes, p. 145.

combat units. U.S. and ARVN officers were prone to this activity. Additionally, command and control elements of the riverine force were subject to attack.

E. TECHNOLOGICAL INNOVATIONS

1. Command and Control

The airmobile command post was the major innovation during riverine operations. It changed the speed of maneuver and control of separated elements. The radio provided the second innovation. Immediate communications with units increased the flow of information to the operational commander for the execution of operations.

2. Firepower

Again, helicopters played a vital role in concentrating effective fire against enemy units evading ground forces. Floating artillery barges added to the indirect fire capability of riverine forces. In swampy terrain, the Ammi pontoon and 105-mm Howitzer provided the bulk of artillery fire. The monitor and zippo added direct fire that could target enemy bunkers. The flame thrower concept was brought to new heights during the MRF's war. The Navy's 81-mm mortar was configured for direct fire, which added to the punch of the MRF's firepower capability. Night sights improved both river assault craft weapon and sniper capabilities. Survivability measures led to the addition of bar armor to riverine assault craft to pre-detonate armor piercing rounds.

3. Scouting

Employing the helicopter for scouting proved essential in terrain familiarization and in detecting exposed enemy movement in advance of a formation. Additionally, it could provide information on likely ambush sites, and during the battle it allowed the commander to sight enemy force movements. Night vision devices improved the scouting capability of reconnaissance teams, ambush operations, and small unit patrols. Use of electronic sensors and radar enhanced base security and barrier operations. Movement of a living creature could be detected without maintaining a permanent presence.

4. Antiscouting

The MRF often used false insertions during airmobile and river assault craft landings to deceive the enemy as to the position of the assaulting force. Also, the MRF overflow areas and fired artillery into areas to deceive the enemy as to where an operation would take place.

5. Screening

The helicopter was the primary advance screening element used by the MRF. However, it could not detect well-concealed enemy ambush sites. The development of the Monitor and ASPB provided a means to screen the MRF from the constant threat of mines and close ambushes. The river assault craft would not operate in small canals without ground forces along the banks to screen their movement.

6. Maneuver

The MRF incorporated column movement of embarked troops to reach the area of operations. Once in the objective area, the MRF operated with other airmobile and ground units to envelop the enemy. The Army readily scrapped the second MRF when helicopters became available for the 3rd Brigade, 9th Infantry Division. Jet propulsion allowed the PBRs to operate in shallower waters in support of MRF operations, but were prone to clogging from floating debris. Although, not used by the MRF, the Patrol Air Cushion Vehicle proved difficult to maintain in the swampy environment, but was useful in the Plain of Reeds where only shallow drafted sampans could ply the waters.

F. CONCLUSIONS

When viewing Market Time, Game Warden, MRF, and SEA LORDS operations, an overall picture emerges of how the U.S. pursued operations in the Delta. It took over three years to integrate the Market Time, Game Warden, and MRF combat elements into a unified campaign to control the waterways. SEA LORDS was the culmination of previous attempts to deny the VC use of the waterways. Initiated after the Tet Offensive, it coordinated operations of these dissimilar craft and forces to pursue a goal of establishing a barrier along the Cambodian border. The force assembled under CTF 194

had the combat potential to erode the Viet Cong's physical, mental, and spiritual will to wage a protracted and ruthless war. The predominant objective of the land campaign -- to seek out and destroy the enemy -- failed to fully exploit SEA LORDS potential. The ground force commanders would dedicate troops and aircraft to CTF 194 only when other search and destroy missions were not readily available. Such ad hoc support constrained CTF 194 from prosecuting a more aggressive campaign. Without dedicated air and ground forces, the barrier operations never became as effective as planned. Despite this, SEA LORDS greatly impeded the flow of supplies and harmed the enemy's morale.

The riverine force gave the mobility to pursue the enemy into his sanctuary in the inundated Delta. Once in the Delta, the MRF located and delivered firepower against the VC units. The evolution of riverine warfare resulted in two distinct types of operations: the first, search and destroy, sought the destruction of the enemy as an intermediary step toward pacification; the second, clear and hold, pursued the pacification of specific areas within the Delta through the maintenance of a continuous waterborne presence. Destruction of the enemy was the MRF's primary stated mission. Control of the waterways was never sought as a primary objective. Even when the MRF supported the pacification of Kien Hoa, it focused on eliminating the enemy rather control of the waterways per se.

The destruction of the enemy entailed locating the enemy and then delivering effective firepower to reduce his force. Technology increased the capacity to deliver firepower but only at an increased cost. The U.S. expended enough ammunition during the Vietnam conflict to "destroy all the soldiers in all the armies that ever existed in the history of the world."¹⁰⁹ Some calculations show a cost \$400,000 to kill a single Viet Cong guerrilla. The negative aspect of "liberation by firepower" came from the increased casualties of Vietnamese civilians, who after losing property and family to American firepower leaned towards supporting the enemy.¹¹⁰

¹⁰⁹Joes, p. 146.

¹¹⁰Ibid., p. 146.

Only by locating the enemy (scouting) could the MRF deliver effective firepower. Often, suspected enemy sightings received extensive "recon by fire" to avert an ambush or harassing fire. In search and destroy assault landings, the MRF relied on air, artillery, and river assault craft fire support to soften the selected landing site. Once off-loaded, the ground force commander could often call in supporting fire, unless the enemy had positioned himself in built-up areas. VC ambushes reversed the sequence of fire support. Close engagements required the riverine force to fend off the attack while fire support could be directed onto the enemy. The closer the ambush occurred, the greater the probability that supporting fire would inflict casualties on friendly forces. Therefore, the VC tried to separate the MRF troops from its supporting fire. The MRF strove to improve its survivability through armor and increasing its organic firepower. The VC ambush became a primary guerrilla tactic and could inflict damage on the MRF's craft and troops. The enemy relied on Soviet and Chinese supplied weapons and a knowledge of the local Delta terrain to apply effective firepower against the MRF. Clearly, the VC had a much better scouting capability than the MRF as evidenced by the high incidence of enemy initiated fire fights.

The MRF was employed for two characteristically different missions: strike or clear and hold. Strike operations were only effective when the enemy maintained large units and base areas. The strike operation never achieved any degree of control over the waterways. Additionally, the objective of eliminating large VC forces did not impede the enemy from launching the Tet Offensive, because the enemy could mass large forces from its dispersed units when needed. During the Tet Offensive, the MRF played a crucial role in rolling back a conventional VC campaign. After Tet, the Accelerated Pacification strategy required a different tactical employment of the MRF.

Clear and hold operations came closer to achieving control of a riverine area. A waterborne presence prompted the VC to attack the MRF who had intruded into their sanctuary. Thus, the U.S. did not need to go in search of the enemy. The enemy was forced into battle if it was to continue operating in areas occupied by the MRF. Although engagements became more frequent, their size became smaller, and the casualty ratio

became more favorable. In search and destroy missions the MRF sustained a 2:6 friend to foe casualty ratio as compared to a 1:5 ratio for clear and hold missions.¹¹¹ As the MRF search and destroy operations became less effective leading up to Tet, it is to the credit of the MRF commanders that they shifted to clear and hold operations. As Sir Robert Thompson noted:

The mistake made in the MRF. . . , was to give them the mission of destroying Viet Cong main force units, this should have been to deny movement on and across the waterways to the Viet Cong.¹¹²

The recognition that the waterways were vital to the enemy was not exploited by the MRF even when they pursued pacification of Kien Hoa. The patrol mission should have been carried out by both the river forces and riverine forces. A waterborne presence was required to deny the enemy use of the waterways, but instead, the MRF sought out the enemy and engaged him in battle - the perceived riverine force mission. In either type of operation a strong scouting capability that incorporates continuous indigenous information was needed to turn the tables on the enemy. The people provided the guerrilla with basic means for survival: recruits, supplies, and intelligence. The waterways provided the guerrilla the mobility to prosecute a long ruthless war. *The MRF sought to defeat the guerrilla through attrition (search and destroy operations) rather than through control of the riverine area and by separating the guerrilla from the people through pacification (clear and hold operations).*

In light of the overall failure of the U.S. strategy in Vietnam, an indicator of the MRF's effectiveness within the Delta can be deduced from the 1972 and 1975 Communists offensives. Extensive land reforms and heavy VC combat casualties are attributed to the stability of the Delta during the '72 Easter Offensive. The people,

¹¹¹Forbes, p. 104.

¹¹²Sir Robert Thompson, Personal Letter, 11 February 1970 in LTCOL Thomas C. Loper, "The Mobile Riverine Force or the Marriage of the Brown Water Navy and the Rice Paddy Army," unpublished study (Carlisle Barracks, PA: U.S. Army War College, 9 March 1970), p. 59.

perceiving legitimacy within the government of South Vietnam, were determined to resist conquest by the northern aggressors. The MRF helped the ARVN and Regional/Popular Forces establish a more credible capacity to coerce the VC within the Delta. Without the MRF, the VC would not have been challenged within their sanctuaries. Final testimony of this was evident in the final phases of the 1975 offensive. Throughout the time when other regions were collapsing towards Saigon, the government and military exercised firm control of the Mekong Delta's sixteen provincial capitals with associated districts until the final pullout.¹¹³

Rear Admiral Salzer summed up riverine operations best with a reminiscence:

As was proven time and time again in Brown Water Navy operations in Vietnam, cooperation with trained and aggressive ground forces was the real key to success. Without that cooperation a measure of initiative always remained with the enemy, who had the choice of when and where to dispute the control and ownership of a particular stretch of navigable water. In the absence of ground forces, the enemy could employ a further application of the strategy of sanctuary, for our boats could 'pursue' only to the maximum effective range of their installed weapons. Air power, to be sure, could further that pursuit and proved invaluable in support of our boats when they were caught up in a fire fight, but a lesson that was learned in the Indochina War, is that air power has only limited effectiveness in a counterinsurgency war and in the interdiction of enemy lines of communication through difficult and largely trackless terrain.¹¹⁴

¹¹³Joes, p. 148-150.

¹¹⁴Commander R. L. Schreadley, USN, "The Naval War in Vietnam, 1950-1970," in Frank Uhlig, Jr., ed., *Vietnam: The Naval Story* (Annapolis, MD: Naval Institute Press, 1986), pp. 301-02.

IV. RIVERINE WARFARE IN COLOMBIA: 1989 - PRESENT

A. THE WAR

1. Nature of the Conflict

The remote reaches of the Amazon Basin have become the setting for recent U.S. experience with riverine warfare against a different kind of unconventional opponent. The so-called "war on drugs" was declared in August 1989 when the United States embarked upon a more aggressive policy aimed at reducing the introduction of illegal narcotics into the United States by severing the connections between drug cartels, insurgents and transnational terrorists - the narco-guerrilla.¹¹⁵ As part of this effort, the United States assisted 70 Third World countries in planning and implementation of programs to disrupt the illegal processing, shipment, and sales by major drug trafficking organizations.¹¹⁶ Fourteen of these countries are involved in programs aimed at the eradication of the "drug crop" at the source. For the United States, the primary focus became the north Andean Ridge of South America, which includes the countries of Bolivia, Peru, Colombia, and Ecuador. The Ridge, with the adjacent Amazon Basin, provides an ideal sanctuary for the narco-guerrilla to cultivate, process, and traffic illicit drugs. This sanctuary also provides a staging area for unconventional warfare against each country's military forces and drug enforcement agencies.¹¹⁷ Lacking the capability to effectively engage this new type of guerrilla in his sanctuary, the Andean Ridge countries requested military and law enforcement assistance from the U.S. Then, Secretary of Defense Dick Cheney articulated the U.S. National Drug Control Strategy:

¹¹⁵Gary Williams, "The War on Cocaine: Strategy and Tactics," *Center Paper*, Center for the Study of Foreign Affairs, Foreign Service Institute, U.S. Department of State, February, 1991, p. 4, 17.

¹¹⁶John M. Collins, *America's Small Wars: Lessons for the Future* (New York: Macmillan Publishing Company, 1991), pp. 205-206.

¹¹⁷John M. Collins, *America's Small Wars: Lessons for the Future* (New York: Macmillan Publishing Company, 1991), pp. 205-206.

. . . to increase the effectiveness of foreign forces efforts to destroy drug processing laboratories; disrupt drug-production enterprises; and control the land, *river*, and air routes.¹¹⁸

2. Evolution of Riverine Warfare

After the assassination of presidential candidate Luis Carlos Galan on August 17, 1989, the Colombian Government declared its own war against the coercion of the insurgents, specifically the Revolutionary Armed Forces of Colombia (FARC). The FARC is a prime example of a private army, hired by major narcotics traffickers to provide security for processing laboratories, crop fields, air fields, and river routes. Prior to the assassination, the FARC and other insurgent forces had control of the countryside east of the cordillera.¹¹⁹ This area encompasses the Eastern Llanos and the Amazon Watershed regions, and comprises three-fifths of the country's total area, but only two percent of the total population. The area consists of numerous large rivers and jungle rain forests. Twenty-four rivers join to form four major systems within the region. These rivers provide over 20 separate points of entrance to the interior and delineate three of Colombia's borders. Over 6,000 miles of navigable rivers provide the primary means of transportation for both legitimate and illegitimate commercial purposes.¹²⁰

Prior 1989, the guerrillas controlled the river systems east of the cordillera. Financed by the Columbian drug cartel, the FARC waged a ruthless campaign, using terror, ambush, bombing, and assassination tactics to exert their authority and to maintain drug processing and trafficking operations. It took the innovations of two U.S. Marine Corps officers to bring the battle to the narco-guerrillas in the unconquered waterways of eastern Colombia. (See Figure 5)

¹¹⁸Richard B. Cheney, Secretary, *Department of Defense Guidance for Implementation of the President's National Drug Control Strategy*, Washington, 18 September 1989. Italics added by authors for emphasis.

¹¹⁹United States General Accounting Office, *Drug War: Observations and Counter Narcotics Aid to Colombia*, Washington, D.C., September 1991, p. 20.

¹²⁰Dennis M. Hanratty and Sandra W. Meditz, *Colombia: A Country Study* (Washington, D.C.: U.S. Government Printing Office, 1990), p. 283.



Figure 5. Rivers and Mountains of Colombia¹¹⁹

¹¹⁹Hanratty and Meditz, p. 68.

3. Early Riverine Operations

The Colombian Navy's Corps of Marine Infantry (COLMAR) stands at about 5,000 marines. Organized into five battalions, the COLMAR is responsible for conducting riverine operations in the interior.¹²² In 1989, it was not trained, manned, or equipped to take on the guerrilla forces in the riverine areas. Its riverine capability was centered around a few 12 to 15 foot "john boats," powered by 25 hp engines, which could transport two to three lightly equipped marines each. When the Colombian government chose to launch its campaign against the guerrillas in the interior, 80% of the COLMAR boats were not operational due to a lack of maintenance and supply parts. The COLMAR could neither project, nor maintain a waterborne presence, and was restricted instead to conducting limited "check point" operations launched from distant bases in the Eastern Llanos and Amazon watershed regions.¹²³ The COLMAR's poor state of readiness prompted one of the members of the Colombian U.S. Military Group (MILGRP) in Bogota to take action.

U.S. Marine Corps Lieutenant Colonel George Buldoc, the USMC representative at Colombian MILGRP, proposed a concept of operations to Rear Admiral Serrano, Commandant of the Colombian Marine Corps, in late 1989. The concept of operations was specifically designed to "increase the influence of the Colombian Marine Corps on the rivers of Colombia."¹²⁴ It called for the creation of 15 riverine combat elements (RCEs), each consisting of:

3 - 22ft Boston Whalers - Piranhas	1 M-2 .50cal MG/2 M60 7.62mm MGs
1 - 35ft Riverine Assault Craft	1 M-2 .50cal MG/1 Mk19 40mm MG/ 2 M60 7.62mm MGs
1 - Ground Assault Forces(GIL)	1 off/21 enlisted marines

¹²²GAO/NSIAD - 91 - 296, *Drug War*, p. 15.

¹²³LTCOL H. Hernandez, USMC, Coalition and Special Warfare Division, MCCDC, Quantico, VA, phone interview by authors, 1 December 1994, Naval Postgraduate School, Monterey, CA.

¹²⁴Mobile Training Team Green After-Action Report, Quantico, Virginia, May - December 1993.

The RCEs would be dispersed throughout Colombia at 15 locations along strategic river LOCs, whence, the COLMAR would maintain an advanced waterborne presence within the contested interior. The following sites were selected in the original plan (See Figure 6):

a-Barrancabermeja	- 2 RCEs	g-Puerto Leguizamo	- 2 RCEs
b-La Tagua	- 1 RCE	h-San Jose del Guaviare	- 2 RCEs
c-Tumaco	- 1 RCE	i-Bahia de Malaga	- 1 RCE
d-Puerto Carreno	- 1 RCE	j-Magangue	- 1 RCE
e-Arauca	- 1 RCE	k-Turbo	- 1 RCE
f-Puerto Inirida	- 1 RCE	l-Puerto Lopez	- 1 RCE

It took three years for the COLMAR riverine force to fully deploy and exploit this unique form of warfare against a guerilla opponent.¹²⁵

In November 1989, Admiral Serrano, Commandant of the Colombian Marines visited U.S. Marine Corps Commandant, General Alfred M. Gray, in Washington, D.C. During this visit, the Admiral asked General Gray if the latter could provide the necessary assistance to fulfill his riverine strategy. General Gray agreed, and quickly acquired approval, whereupon Lieutenant Colonel Hernandez, USMC, Coalition and Special Warfare Division, was tasked to develop and implement what is now referred to as *The U.S. Marine Corps Counterdrug and Riverine Program*.¹²⁶

¹²⁵Coalition and Special Warfare, MCCDC, *USMC Colombian Riverine Program History*, Quantico, VA. This 20 page unpublished document was provided to the authors. It presents the only concise history of the U.S. Marine Corps involvement in training the Colombian Marine Corps for riverine operations against the narco-guerrillas.

¹²⁶Coalition and Special Warfare Division, *USMC Counterdrug and Riverine Program*, Quantico, VA.



Figure 6. Location of Colombian Marine Corps Riverine Combat Elements (RCEs)¹²⁷

¹²⁷MTT Green After-Action Report.

Working closely with LTCOL Buldoc, Hernandez drew up a plan that led to the creation of a full scale mobile riverine force capable of conducting waterborne operations deep within the Colombian interior. He coordinated the organization and training of numerous joint/combined Mobile Training Teams(MTT) along with the planning and acquisition of assault craft and associated weapons, which would form the basis for assisting the development of RCEs. Hernandez and Buldoc were involved in each MTT operation and travelled extensively throughout Colombia to supervise the process. When the 22-foot Boston Whalers were procured, Hernandez organized four primary riverine MTTs:

Riverine MTT "Red"	March - June 1991
Riverine MTT "Basco"	September - December 1991
Riverine MTT "Gold"	August - December 1992
Riverine MTT "Green"	June - December 1993

The MTTs gradually developed COLMAR's riverine capability. Each RCE became skilled in both ground and waterborne operations. Upon completion of its training, the graduating RCE (without USMC assistance) would conduct riverine assaults on known or suspected drug targets in the RCE's region of responsibility. In April 1991, the RCE trained by Team Red conducted the first riverine assault against a suspected site. This operation was the first offensive strike launched against a defended location in the history of the riverine program. The COLMAR captured large quantities of materials and narcotics and destroyed the site.

However, this waterborne intrusion into the interior was soon contested by the guerrillas. During July of 1991, RCEs based at the central interior town of San Jose del Guaviare were ambushed and suffered substantial casualties and equipment losses. Colombian marines sustained 32 casualties, and 60 percent of the boats were destroyed, forcing the closing of the Rio Guaviare, a major east - west waterway, to all commercial traffic until the RCEs were replaced. Recent published information is misleading in the

presentation of this particular engagement.¹²⁸ Specifically, it should be noted, the ambushed RCEs were not trained by the USMC MTTs.¹²⁹ Nevertheless, the COLMAR recovered from the setback and within a short period of time adjusted its tactics, and struck back at the cartels with another successful attack. This raid, benefitting from the training by MTT "Basco," resulted in the capture of large quantities of drugs, chemicals, and other processing materials.

Similar results would transpire with the next RCE trained by MTT "Gold." The combat operations that followed this training involved the integration of adjacent ground forces into the scheme of maneuver. The success of the follow-on operation was duly noted by the supported battalion commander who insisted upon MTT support for his command. The progress in the integration of a riverine capability within Colombian counterdrug operations was finally realized through the efforts of the last MTT.

MTT "Green" trained 300 Colombian marines based at Puerto Leguizamo, a river town on the Rio Putumayo which borders Peru. After five months of extensive training, the graduating RCEs spearheaded the largest counterdrug offensive against the guerrillas since the commencement of the "drug war." Combining forces with the Colombian National Police (DIRAN) and the Navy, the Colombian marines supported simultaneous ground, air, and riverine assaults against numerous objectives. From September 27 to October 3 1993 during Operation "Black Gold" this combined force concentrated its superior firepower potential directly against the guerrillas.

4. The Final Test

Operation Black Gold was unique in the Colombian counterdrug strategy in a variety of ways. It was the first joint operation conducted by the COLMAR and DIRAN, in which riverine forces played a major role. Also, it was the first coordinated use of heliborne forces with the COLMAR riverine forces. This combined force created a

¹²⁸Captain Darren Pitts, USMCR, "Fighting Drugs at the Source", in *U.S. Naval Institute Proceedings*, vol. 120/7 (July 1994), p. 54. This article provides a general overview of USMC participation in the development of the Colombian Marine Corps riverine capability.

¹²⁹Hernandez, interview by authors.

stronger, more mobile and lethal force than previous strike operations. Before operation "Black Gold" the riverine force's mobility was limited to "foot movement" once the assault force had debarked from the boats. During Black Gold, the COLMAR used the helicopters to transport elements of the riverine ground force. DIRAN's helicopter combat power was limited by its vulnerability to ground fire, which reduced its ability to confront organized resistance in the objective area. Together, the helicopter assault force and riverine assault force formed a synthesis of combat potential that facilitated the delivery of firepower against the enemy.

a. The Plan

The Colombian Navy, Marine, and DIRAN forces developed a joint plan to attack a large narcotics producing complex in vicinity of the port town of Piñaña Negro on the Río Putumayo. Hernandez, Buldoc (recently retired and now senior advisor to the Colombian Anti-Narcotics Police ground forces) and LtCol William R. Kellner, USMC, officer-in-charge of MTT Green, were involved in the overall planning. DIRAN had previously attacked the targeted drug complex but was repulsed by overwhelming ground fire. The COLMAR had made a previous assault upon the town and captured many drug laden vessels; however, a lack of intelligence about the enemy disposition prevented further advance towards the airfield or lab complex. Intelligence indicated that a well armed force of 50 FARC guerrillas protected the laboratory complex and airfield.

The following is an abbreviated version of the planned scheme of maneuver: Two days prior to the assault, two GILs use a commercial ferry to reach the town of Piñaña Negro concealing the fact that troops are embarked. One day prior to the assault, three boat units with embarked GILs move up the Putumayo River to Puerto Ospina using the cover story that they are reinforcing the posts. Additionally, DIRAN concentrates their helicopter forces at Puerto Asis. On the day of the assault, the GILs embark on the commercial ferry, and seize control of the town of Piñaña Negro. Thirty minutes later, the three boat units move into position and block river traffic upriver and down river of the town. Upon notification that the town is secured, but no later than one hour, the riverine force proceeds up the Piñaña Negro River and within 30 minutes links

up with the heliborne force that has secured the airfield. Following the linkup with the DIRAN elements, the COLMAR units take over responsibility for the security of the airfield. Within one hour of the seizure of the town, two GILs transported by DIRAN's Twin Otter (a fixed-wing, propeller aircraft) land on the air strip. Thirty minutes later, COLMAR and DIRAN forces conduct simultaneous, mutually supporting attacks to seize the objectives within their assigned areas. Within three hours of the commencement of the operation, the ARC *Riochaha* (a small destroyer) takes position in the Putumayo River in front of the town of Piñaña Negro and control all river traffic. Two GILs remain in position in the airfield, one of which is designated a reserve. The reserve must be prepared to be transported by helicopter or boat to support either the COLMAR or DIRAN forces.¹³⁰ That was the plan. (See Figure 7)

b. The Operation

The operation itself did not deviate much from the plan. The assault forces debarked from the ferry and seized the town without any resistance. The riverine forces (in Piranhas) moved into blocking positions 30 minutes behind schedule because the river was shallower than expected, and several of the boats ran aground while searching for a channel. DIRAN helicopters with troops embarked departed behind schedule and arrived in vicinity of the airfield 30 minutes late. During this delay, a heavy cloud front blew in from the east and covered the airfield. The helicopters, using global positioning satellite navigation system (GPS), circled the intended landing zone at 1,000 feet and attempted to land. Unable to do so, and running low on fuel, the aircraft were diverted to an alternate landing site east of the town along the Putuyamo River. As the riverine force moved up the Piñaña Negro River toward the airfield, the boats ran into manmade underwater obstacles, which delayed their movement. After the cloud cover

¹³⁰Lieutenant Colonel William R. Kellner, USMC, MEMORANDUM: POST OPERATION SYNOPSIS OF THE COLOMBIAN COUNTERDRUG OPERATION "BLACK GOLD", to Director, Coalition and Special Warfare Division, MCCDC, Quantico, VA, dated 13 October 1993. The context has been modified by the authors for clarity.

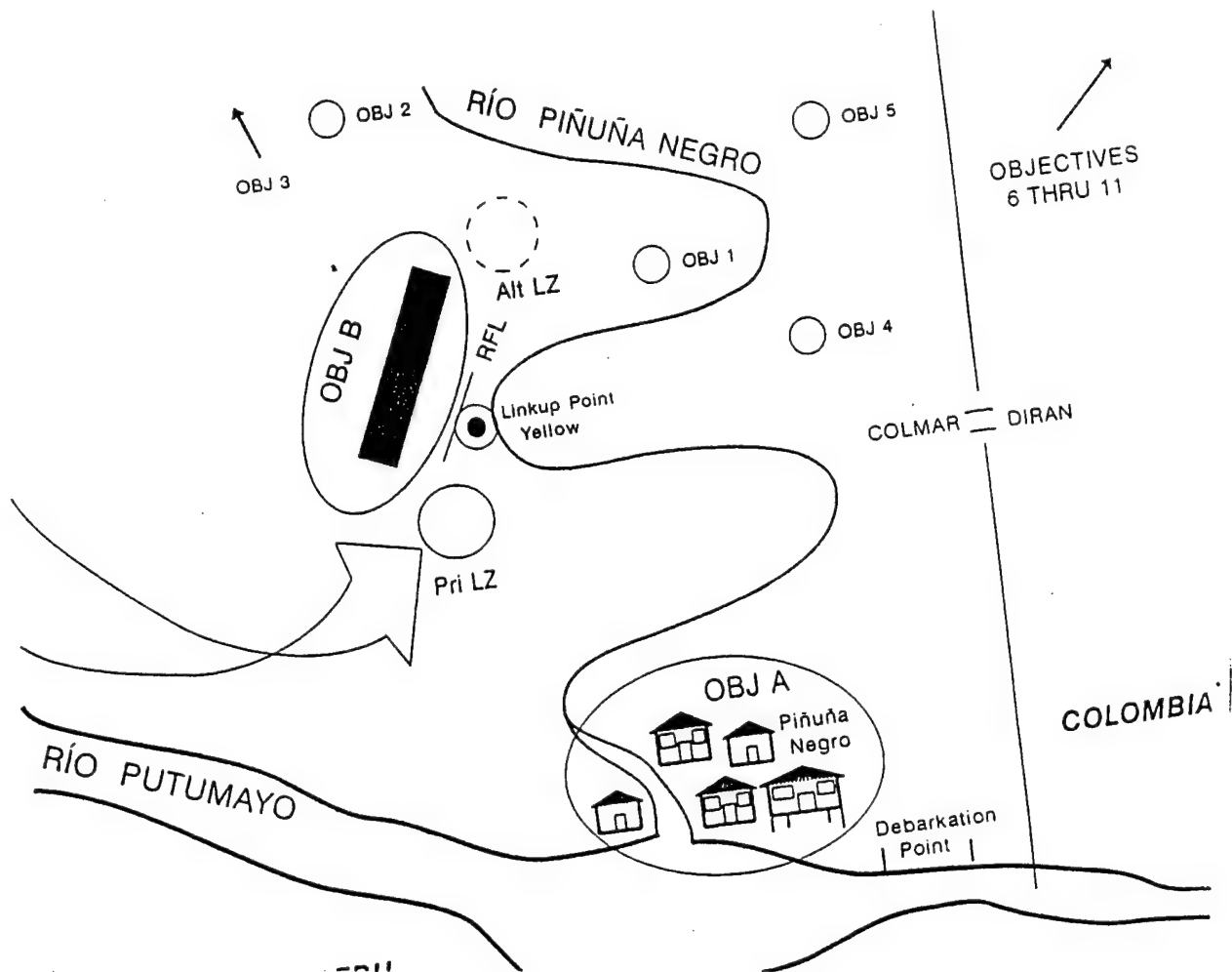


Figure 7. Operation "Black Gold."¹²⁹

¹²⁹Kellner, map insert.

lifted, the second heliborne assault force wave was inserted in a secondary landing zone near the airfield. Shortly thereafter, the first wave was airlifted to the primary landing zone. The heliborne forces linked up and seized the airfield without meeting any resistance. The COLMAR arrived and joined with the heliborne forces at the designated link up point without incident. Owing to radio communications problems, the forces aboard the Twin Otter arrived above the airfield three hours late. The night before rain had soaked the grass runway making it too slippery for a safe landing attempt. The plane, which was carrying the reserve force, was directed to land at Puerto Asis, where the GILs were transported to the airfield by awaiting helicopters. Meanwhile, with the reserve force rerouted to Puerto Asis, the ground force commander was unwilling to advance the attack. However, after reorganizing his command and designating a new reserve, he ordered the continuation of the attack. The DIRAN heliborne force continued the assault on to their next objectives.

Only one half of the intended objectives was seized by night fall, with the remaining objectives and new targets of opportunity being captured during the next four days. The assault, on the first day, led to the capture of 11 laboratories, a large amount of gasoline and precursor chemicals, and seven prisoners (2 suspected FARC). The assault on the first day resulted in the capture of 85% of the entire cocaine base collected during the entire operation. Between 27 September to 3 October 1993, operation "Black Gold" resulted in the destruction of 26 more cocaine-base laboratories, a clandestine airstrip, and thousands of gallons of gasoline and precursor chemicals. Above all else, the operation demonstrated that by joining riverine assault forces with heliborne assault forces, the Colombians were more effective in achieving the intended objectives than if each unit had attempted to assault the same target independently.

B. THE ANALYSIS

1. Hughes' Model

a. Objective

The COLMAR conduct riverine operations to deny the narco-guerrillas longitudinal use of specific waterways within the interior of Colombia. The goal is to achieve complete control of the waterways "at and inside Colombia's borders."¹³²

b. Means

The COLMAR have established advanced riverine bases (enclaves) at strategic locations along specific waterways. Operating from these bases, the COLMAR conduct riverine patrols, raids, ambushes, sweeps, and blocking missions to control all vital points within proximity of the enclave. Riverine combat elements from one enclave support larger operations in the same or adjacent locations.

c. Forces

The initial strategy called for the establishment of 15 riverine combat elements. This requires a large commitment of forces from the COLMAR which numbers only 5,000 marines in total. Sustaining a land and waterborne presence on specific waterways in Colombia equates to over 15% of COLMAR personnel. Total funding for just the river assault craft from the start of the program (FY-90) to the end of Fiscal Year 1993 was \$64.46 million dollars.¹³³

d. Level of Control

The RCEs are now able to deny longitudinal movement within close proximity of their enclaves. Large strike operations have raised the guerrilla's cost of maintaining operations, however, the limited duration of these operations means that only partial control of the riverine area can be claimed.

¹³²CSW, *USMC Colombian Riverine Program History*, p. 1.

¹³³*Ibid.*, p. 8.

Compared to the previous case studies, this level of control is more feasible for the COLMAR to pursue. The cost/benefit ratio of partial area control is more economical than higher costs associated with complete area control. Although viewed as a small waterborne/land presence, the establishment of 15 strongpoints, within hostile territory, benefits the perception of legitimacy for the government of Colombia. This presence demonstrates the capacity to coerce the enemy who is compelled to either withdraw from the area or attack the intrusion. Lacking the expansive resources necessary to wage an extensive offensive riverine operation, which seeks control of the entire region, Colombia is relegated to devote available assets to establish partial area control, an economy of force measure.

2. The Elements of the Combat Process

The following elements apply specifically to Operation "Black Gold."

a. Command and Control

Command and control of the riverine force is simplified when personnel and equipment belong to the same service. The COLMAR operates with other services and agencies when cooperation results in more favorable employment of the riverine force. The integration of the RCEs into the Colombian counterdrug strategy requires a strong radio connectivity between the various military and police units. Periodic lapses in radio communication between and among adjacent units proved detrimental to the overall operation.

b. Firepower

Since air support is not available, the COLMAR riverine force is totally dependent upon its own firepower. Until the arrival of a riverine assault craft with a 40-mm grenade launcher capability, this firepower is limited to the Piranha's .50 caliber and 7.62-mm machine guns. Once the assault force is ashore, the primary firepower element is the individual marine armed with the U.S. M-14, 7.62mm rifle. Efforts are underway to obtain better individual and crew-served weapons.

c. Scouting

Intelligence is the key to riverine counterdrug operations. The COLMAR has limited access to modern technological advancements and, therefore, human intelligence is still considered the most valuable asset at the tactical level. The unfamiliar and difficult terrain of the interior places a premium on the support of the local population. This became vital during the conduct of small unit operations. If the riverine forces did not have air cover, the potential for a guerrilla ambush or attack was great. To avoid a guerrilla attack the riverine force's intelligence gathering capability rests with the indigenous population.

d. Antiscouting

To ensure operational security during operation "Black Gold," a deception plan was devised to mislead the enemy and surrounding population. The increased training of the COLMAR was explained as a necessary precaution for the anticipated FARC "Black September Campaign," which called for the targeting of military posts. The marines attempted to deceive the enemy and convinced him that the riverine force was being deployed only to reinforce local military posts and not to stage any type of offensive operation. The use of commercial transport, such as the ferry, was an additional cover measure to achieve surprise.

e. Screening

Since air support is usually not available, the RCEs are dependent on organic assets for screening. The small size of the RCEs makes the requirement for stealth more critical in the absence of air cover and external fire support. The ambush of the RCEs at San Jose del Guaviare highlighted the importance of having a great volume of fire organically or immediately accessible.

f. Maneuver

The riverine force relies on the column formation when conducting assault operations. The river craft's shallow-draft and speed increased the areas a river force could penetrate. Although the RCEs are widely dispersed throughout the riverine area, the capability exists to quickly mass RCEs to conduct limited search and destroy

missions. Operation "Black Gold" drew together several existing RCEs from different locations and trained several more to launch a strike operation.

C. THE ENEMY'S CAMPAIGN

1. Objective

The objective of the narco-guerrilla is to harass and disrupt the COLMAR's attempt to establish lateral control on selected waterways. Disrupting this control facilitates the trafficking of narcotics and the necessary precursor chemicals for drug production.

2. Means

The narco-guerrilla uses the riverine area of the Colombian interior to monetize its offensive insurgency. The interior is used to cultivate, process, and traffic narcotics which sustains the insurgency with financial support. The difficult terrain facilitates the conduct of ambushes and raids against the Colombian government attempts to gain control over the region. The FARC had demonstrated a riverine expertise for sustaining an insurgency and transporting narcotics and associated supplies along the network of waterways. Until the effective employment of the COLMAR riverine forces, the waterways in the interior were the FARC's roadways and lines of communications.

3. Forces

The FARC use units of various sizes to conduct their guerilla campaign and maintain drug production activities. The use of the ambush and raid prevail since the advent of the COLMAR riverine force within the interior. The local population is subject to terror to ensure loyalty to the guerrilla cause. The guerrillas have the capability to mount large scale operations against government forces.

4. Level of Control

Physical control of the entire riverine area is not necessary for the FARC to sustain both drug trafficking activities and the insurgency. However, intermittent longitudinal waterway movement along specific waterways is essential to conduct offensive operations, such as raids and ambushes. Similarly, intermittent cross-water

movement is vital to transport war and drug processing supplies. This mobility depends on a detailed and intimate knowledge of the Colombian interior, which is resident in the indigenous population. The FARC's superior local knowledge has translated into a better intelligence (scouting) capability than that of the COLMAR. The people provide the essentials for sustainment of the insurgency: logistical support, recruits, and intelligence. These three necessary conditions depend on the FARC's ability to control the towns and villages.

D. THE ENEMY'S ELEMENTS OF THE COMBAT PROCESS

1. Counterforce

The capacity to reduce the effect of the U.S military's firepower. The narco-guerrilla has created an effective counterforce by intelligent use of difficult terrain, guerrilla tactics, and Soviet/Cuban-made weapons. The synergism of these elements provide the necessary firepower to contest the assault tactics of the riverine forces in their efforts to establish a waterborne presence.

a. Defensive Force

The capacity to either destroy attacking weapons or defeat them by methods other than shooting them down. The narco-guerrilla has used the riverine terrain in the interior of Colombia for over forty years to avoid the superior firepower of government forces. The biggest threat to riverine forces are ambushes that are directed from the river banks. Rocket propelled grenades, mortars, automatic rifle, and machine gun fire are the predominant weapons encountered during an ambush.

b. Staying Power

The capacity to absorb damage and continue fighting with measurable effectiveness. After 40 years of guerrilla warfare, the FARC has enhanced its ability to wage a protracted insurgency by joining forces with the drug cartels. The so-called protection money has made it possible to procure quality war supplies.

c. Cover

Secrecy, camouflage, or concealment to avoid attack. The narco-guerrillas are masters of the use of cover and concealment in military operations and in the covert cultivation and processing of the drug crop. Both drugs and weapons are covertly transported on the rivers with a wide variety of vessels. Use of clandestine airfields is a common practice of the narco-guerrillas. Air transport during the hours of darkness enhances the affect of this tactic.

d. Deception

Deliberate misrepresentation of reality to gain an advantage. The narco-guerrillas often used times of truce and negotiation to rebuild and reconstitute their combat potential and drug producing capability.

e. Dispersion

The displacement of units that carry force. The FARC uses the basic guerrilla tactics of operating in small units and massing only for limited strikes. Such tactics facilitate mounting large surprise attacks. If the attack fails, the FARC can quickly dismantle into small independent units and blend into the countryside. This fluid and flexible combat organizational structure has denied government forces to inflict large losses.

2. Antiscouting

Actions taken to destroy, diminish, or preclude Colombian scouting effectiveness. The guerrillas make maximum use of the local population to provide early warning of an impending assault by government forces. The guerrillas have recognized that collaboration by the local population with government forces can jeopardize their operations. To guard against this, terror campaigns have been waged against whole towns and villages. Without a substantial presence of government forces, such campaigns have usually proven

effective. The access to electronic jamming, tapping, and interference equipment has brought an additional antiscouting advantage to the guerrilla.¹³⁴

3. Command and Control Countermeasures

Actions taken to defeat or delay the effectiveness of the enemy's command and control. An effective means of counter C² is the specific targeting of command and control vessels. The FARC ambush personnel and supply transports to disrupt the command and control of the widely dispersed RCEs. These attacks also disrupt the lines of communication for commercial activities, which lessens the credibility of the government. As noted in connection with the guerrilla's antiscouting capability, access to electronic jamming equipment also facilitates a command and control countermeasure capability.

E. TECHNOLOGICAL INNOVATIONS

Prior to the introduction of U.S. support, the narco-guerrilla had far better exploited the benefits of modern technology, including modern communications and commercial signal encryption. Due to budget constraints, the government forces were neither prepared, nor equipped to fight the high technology arms of the FARC.¹³⁵ Government weapons were no match to the guerrillas' AK-47 and M-16 assault rifles. The FARC's use of mortars and RPG-7s also indicates a well equipped enemy with money to buy the best. Additionally, the guerrillas use modern communication equipment to control widely dispersed units. Hijacked light aircraft provided the means to move personnel and supplies from one region to another. This capability gave the guerrillas a "flexible logistical apparatus."¹³⁶

¹³⁴Suzanne Bettina Danneskiold Lassen, "Drug Trafficking and Terrorism in Colombia," in Rubin, ed., *The Politics of Counterterrorism: The Ordeal of Democratic States*, p. 124.

¹³⁵Ibid., p. 124.

¹³⁶Rachel Ehrenfeld, *Narco Terrorism* (New York: Basic Books, 1990), p. 83.

F. CONCLUSIONS

The threat posed to the United State's strategy by the narcotics trade led to U.S. Marine Corps involvement in Colombia. The Colombian Marine Corps had recognized the need to create a riverine force to gain and maintain control over its interior waterways, and requested the assistance of the U.S. Marines. The U.S. gave the Colombian Marine Corps the much needed resources and training to develop a capable riverine force to bring the war to the guerrilla in his riverine sanctuary. However, it took close to four years to create a combat force that had the potential to attack the narco-guerrilla's control of the inland waterways. Small unit riverine actions evolved into large scale operations that integrated river assault craft, helicopters, marines and the national police into a formidable counterdrug assault force.

Unlike the previous two case studies, the U.S. and Colombian Marine Corps quickly moved beyond raids and into the more effective clear-and-hold strategy as its primary focus. This strategy rested on the combat potential of an effective riverine warfare capability both quantitatively and qualitatively. To support the strategy, the COLMAR now have 19 riverine combat elements on the strategic river lines of communications. Maintaining a credible waterborne presence, the COLMAR can conduct sustained riverine operations with the support of adjacent units. Until the procurement of a suitable assault craft with an enhanced firepower capability, the riverine force is restricted to limited search and destroy and patrolling operations. Control of the entire basin is far beyond the means employed, extensive though they are. These operations are harassing and disrupting the narco-guerrillas' drug producing activities within selected regions of the interior with it is hoped, a demoralizing long term effect. The deployment of riverine combat elements to strongpoints (enclaves) in the interior has denied the enemy longitudinal use of the selected waterways.

The guerrilla's firepower potential remains the biggest threat to the Colombian Marines' riverine operations in the interior. The narco-guerrilla in many instances possesses a far greater combat potential than that of the riverine force. Therefore, to pursue offensive operations beyond raids and the destruction of the guerrilla's resources,

the Colombian Marines must increase the firepower and survivability of the riverine force. Helicopter gunship support is the best means to support the lightly armed and protected riverine combat elements; however, such a capability is not readily available to the Colombian Marine Corps. Until the procurement of a suitable assault craft with enhanced firepower and survivability, the Colombian's clear and hold strategy remains contested. Instead, the riverine force is restricted to limited raids and patrolling operations in the vicinity of its strongpoints. This can only facilitate partial control of the riverine area along selected waterways.

Following the establishment of these riverine enclaves, the COLMAR initiated limited search and destroy operations using combined air and waterborne assault forces to strike directly at the guerrillas ability to cultivate, produce, and transport cocaine. The primary objective was not the elimination of the guerrilla units, who provided the security for crop fields and processing plants. However, these operations do serve the purpose of harassing guerrilla activities in the area. Clear and hold operations and limited search and destroy missions have forced the FARC to contest the governments presence in the riverine area. Most likely, the FARC will be forced to increase its firepower potential and develop tactics such as mining, anti-air defense, and swimmers/sappers to inflict more casualties on the riverine force. The FARC has already demonstrated its capability to impose a heavy cost on the riverine forces.

Success for either side in this ruthless "drug war" will be determined by the control of the key asset - the people. Control of the population will provide the recruits, supplies, and the intelligence to the side which can demonstrate the credible capacity to expand (or extend) control. The Colombian Marine riverine force is demonstrating that capacity. In 1993, the RCEs conducted 137 major operations resulting in:

Labs destroyed	54
HCL (processed cocaine)	1,371 kilos
Base/Paste/Leaf captured	5,229 kilos
Precursors (chemicals)	5,972 kilos
Precursors (gasoline)	10,261 gals ¹³⁷

This falls within the recent change in the U.S. National Drug Control Strategy. Shifting from drug interdiction missions, the U.S. is strongly encouraging the source nations to attack the drug problem by "destroying narco-trafficking organizations."¹³⁸ Fortunately for Colombia, the efforts of the riverine force "demonstrates the strong political will" necessary for continuing U.S. assistance.¹³⁹

The recent activation of the Colombian Marine Corps Riverine School ensures the maintenance of the capability to effectively wage war on the inland waterways. Although there is no clear end in sight for the "drug war," combat operations against the guerrilla will continually test the COLMAR's ability to deliver its combat potential where needed in the riverine environment. The persistent delivery may ultimately demoralize the enemy, but as in operations at sea, the effects are less than obvious, slow, relentless, and cumulative.

¹³⁷CSW, *USMC Colombian Riverine Program History*, p. 14.

¹³⁸The White House, *National Drug Control Strategy*, Washington, D.C., February 1994, p. 50.

¹³⁹*Ibid.*, p. 54.

V. CONSTANTS AND TRENDS

A. OPPOSING STRATEGIES

Riverine forces have been used to pursue two strategies in each case study. In the Seminole and Vietnam Wars, offensive strategies aimed at annihilation of the enemy through search and destroy operations were followed.¹⁴⁰ It was envisioned that inflicting high enemy casualties would raise the costs of the war to the enemy to such a point that it would erode the morale and fighting spirit of the insurgent to maintain the fight. For their part, the guerrillas did not view the conflict in the same light. For the guerrilla, the war was not a zero sum game, but one of survival. Professor Larry E. Cable explains:

... not correctly appreciated is the simple fact that once armed insurgency has commenced, it becomes the functional equivalent of a total war of national survival in which only one of the two contenders for power will be extant at war's end.¹⁴¹

Either the guerrilla force would survive undominated by the riverine invader or it would die trying; a political compromise was not an option as long as a sanctuary existed for the guerrilla. Therefore, the United States could not impose a cost beyond the guerrilla's threshold of tolerance, since the guerrilla had more to lose than the major power. For the U.S., victory would only marginally add to its relative position in the world, whereas for the guerrilla victory was the only means to altering its position not only in the state, but in the world arena. Jacob Borresen makes a similar point in an albeit quite different contest, i.e. the struggle between a small and a large power:

The small state may certainly win single battles, but cannot hope to win the war against a major power as long as the major power maintains his will to carry it on. Instead, the aim of the small state is to bleed the

¹⁴⁰Buker, p. 139-40.

¹⁴¹Cable, "Reinventing the Round Wheel: Insurgency, Counterinsurgency, and Peacekeeping Post Cold War," p. 32.

enemy's military and political resources, until he comes to the conclusion that the price of continuing the war exceeds any gain he might hope to reap from it. And in that context one or more tactical or operational victories may certainly come in handy for the small state. The point is, however, that it becomes more important to be able to maintain the pressure over time, than to be able to beat him in a spectacular confrontation head to head. As Clausewitz has taught us: War is primarily a struggle between wills.¹⁴²

The guerrilla views the war in the same context as a small state. Thus, its tactics will usually center on eroding the major power's desire by opposing its aim to gain political control.

The second strategy used by U.S. riverine forces was to seize and hold vital positions. A "clear and hold" strategy centers on positioning a riverine force in a selected area to try and maintain a permanent presence in which to challenge the guerrilla's control of key territory. In Vietnam, riverine forces pursued such a strategy. The MRF was dedicated to the pacification of Kien Hoa Province for approximately one year. The guerrilla found such permanent presence of the MRF in key positions intolerable and was forced to attack them. Again, the guerrilla relied on the strategy of raising the cost to an unacceptable level for the riverine force. In Colombia, the USMC/USN trained COLMAR riverine force is pursuing a clear and hold strategy. Forces are divided into 19 separate combat elements, which are deployed at specific sites along waterways that are considered strategic lines of communications. The goal is to control the waterways at and inside Colombia's borders.¹⁴³ The ground force and national/local police are pursuing pacification operations in villages located next to the riverine force base areas. Such a strategy is challenging the guerrillas' traditional control over the population resources and communications. It is forcing the FARC to attack the riverine force to maintain its

¹⁴²Jacob Borresen, "Seapower: Theory and Practice," in *The Journal of Strategic Studies* Vol. 17 (March 1994), p. 152.

¹⁴³CSW, *USMC Colombian Riverine Program History*, p. 1.

coercive credibility among the people. The clear and hold strategy is recognized as a classic method for isolating guerrillas.¹⁴⁴

The execution of riverine warfare campaign strategies depended on the tactical skill of the commander, experience and training of the riverine force, and the available troops and equipment. The strategic aims of the riverine campaign were dependent upon the tactical proficiency of the riverine force. Each riverine strategy ultimately sought to gain and maintain control of the riverine area. Table 1 reviews the various levels of control, as prescribed in Hughes' Model, that a riverine force can attempt to achieve. Table 2 summarizes the level of control achieved by each riverine force in the three case studies by use of Hughes Model. Table 2 also shows that raiding (search and destroy) was ineffective in establishing control of the riverine area. Conversely, by establishing a sustained land and waterborne presence (clear and hold strategy) at selected, vital locations in the riverine area, the riverine force was effective in achieving partial control and imposing costly constraints on the enemy. The focus of this study, however, is the tactics used by the riverine force in achieving the objective of complete control of the riverine area. The following section presents the trends and constants of the riverine tactics developed against a guerrilla opponent.

¹⁴⁴Joes, p.212. Also, see Sir Robert Thompson, *Defeating Communist Insurgency: The Lessons of Malaya and Vietnam* (New York: Praeger, 1966).

<u>Objective</u>	<u>Means</u>	<u>Forces</u>	<u>Level of Control</u>
harassment/disruption of enemy activity	limited raids	mission dependent	temporary, local incidental
deny movement on selected waterways	interdict/impede longitudinal movement (up/down river)	small commitment for waterborne presence	limited longitudinal control of selected waterways
temporarily deny longitudinal movement	control all vital points along waterways	medium commitment for waterborne presence	longitudinal control of all waterways
temporarily deny all waterway movement	patrol all navigable waterways	large commitment for waterborne presence	temporary control of longitudinal/cross waterway movement
deny enemy longitudinal use of specific waterways	establish strongpoints (enclaves) along specific waterways	large commitment for sustained land and waterborne presence	partial area control
deny enemy use of waterways	establish enclaves and patrol all navigable waterways	largest commitment for sustained land and waterborne presence	area control

Table 4. Condensed Version of Hughes' Gradations of Control Model

	<u>Seminole War</u> (1835-42)	<u>Vietnam War</u> (1965-72)	<u>Colombian Conflict</u> (1989-present)
Objective:	complete area control of the Everglades	complete area control of Mekong Delta	complete control of interior waterways
Forces: (Riverine Craft)	622 (140 canoes)	~5,000 (178 Assault Craft)	~750 (~60 Piranha Craft)
Means: (Tactics)	Raiding	Raiding (to 1968) Strongpoint (1968-1969)	Strongpoints
Level of Control:	4	4 (up to 1968) 5 (Kien Hoa)	5

(Sources: Clodfelter, *Warfare and Armed Conflicts*; Ehrenfeld, *Narco Terrorism*, Buker, *Swamp Sailors*, and Mahon, *The History of the Second Seminole War*)

Table 5. Evaluation of Three Case Studies

U.S. riverine warfare tactics have historically been tested in contests in which the United States faced "minor," guerrilla, powers. The following discussion focuses on the trends and constants of riverine tactics that have arisen from these conflicts.

B. THE TACTICAL TRENDS OF RIVERINE WARFARE

1. Maneuver

The trend has been the increasing speed of the riverine force's ability to maneuver. Faster craft, helicopter support, "real-time" encrypted communications, and improved navigation systems all contribute to a potential for quicker movement of combat elements.

2. Firepower

In general, firepower has increased in accuracy, range, and lethality. Trevor Dupuy in his study, *The Evolution of Weapons and Warfare*, traces the important trends of sea, air, and land warfare. He attributes the apparent paradox between increased weapons

lethality and decreased casualty rates to the dispersion of forces in the face of more lethal firepower.¹⁴⁵ How has this trend influenced riverine warfare? During the Seminole War, riverine forces relied on the infantryman to deliver firepower against the opponent. Attempts were made to place carronades on the barges, but the barge could not penetrate into the enemy's riverine sanctuary. Harney's decision to switch to the Colt rifle changed the advantage of firepower in favor of the U.S. riverine force. The Seminole warriors defended against the riverine force by fighting from defensive positions with smaller caliber rifled muskets. The defensive has been noted as the stronger of the two positions and the Indians mastered the art of fighting from defended positions in difficult terrain to limit the firepower advantage of the riverine force.¹⁴⁶

In the Mexican War and Civil War, riverine craft provided mobility to conduct operations against an enemy who relied on conventional tactics. The rivers were essential lines of communications. Such tactics led to engagements where the enemy directly contested the riverine force. During the Civil War, the Union Navy developed a wide array of weapons that were used by the riverine force. The monitor, ram, mortar barge, and gun boat all increased the firepower capacity that could be delivered against the opponent. The riverine force was able to support troops with firepower from the water, which proved effective not only against the opposing ground troops, but also against fortifications. But the deep draft of the larger boats still kept the riverine craft from plying the shallow waters, and thus the infantryman was still the primary means of bringing the battle to an opposing ground force in areas where the riverine craft could not penetrate.

The Second Nicaraguan Intervention changed the means to deliver firepower against an opponent. The Marines used aircraft in support of riverine operations for the first time against Sandino's guerrilla force along the Coco River. Air delivered firepower became so important to USMC riverine operations that Captain Merrit A. ("Red Mike") Edson,

¹⁴⁵Colonel Trevor Dupuy, U.S. Army, Ret., *The Evolution of Weapons and Warfare* (New York: the Bobbs-Merril Company, Inc., 1980), pp. 309-310.

¹⁴⁶Dupuy, p. 326.

USMC, declared that without air cover riverine operations should not be conducted. Although hindered by the mountainous topography, the slow flying biplanes were able to provide close air support with machine gun fire against the insurgents. The guerrillas responded to the new threat by developing tactics to shoot down the aircraft. Access to new technologies (i.e., modern machine guns) benefited Sandino's guerrilla force, and on several occasions the guerrillas were able to shoot down or severely damage aircraft by a concentration of machine gun fire.

In Vietnam, firepower became all important for the Mobile Riverine Force (MRF). The terrain still constrained the riverine craft from penetrating into the shallower waterways, but the radio enabled a forward observer to direct the fire from aircraft, artillery, and riverine assault craft. The destructive power of the riverine force greatly increased with its ability to engage an enemy with indirect fire. The MRF became dependent on helicopter gunships to suppress enemy fire during offensive operations.

In Colombia, the Marines learned the harsh lesson of operating in a riverine area without sufficient firepower to suppress enemy fire. A valuable lesson was relearned from the annihilation of two Colombian riverine combat elements. It was that a riverine force operating without air cover needs to increase its survivability by increasing both its suppressive fire capability and protection from enemy fire.

The trend shows that riverine forces have increased the potential to deliver firepower against a guerrilla opponent even if the riverine craft cannot penetrate into the enemy's sanctuary. But effective firepower, especially for suppression of enemy fire and movement, is what counts in battle. The U.S. riverine warfare style focused on increasing its suppressive firepower capacity. Thus, the forward observer became the crucial link between the riverine force and its firepower.

3. Counterforce

The capacity to reduce the effect of delivered firepower. The trend in counterforce is increased survivability of the riverine craft. Survivability was first achieved by way of stealth, cover and deception. In the Seminole War, the riverine force relied on cover and deception to avoid enemy detection while moving toward the objective; once engaged

in battle, it relied on firepower to defeat an opponent. Survivability shifted to armor and superior counterfire during the Civil War. The Union Navy's river fleet emphasized armor and increased mobile, afloat artillery to deliver firepower after being engaged by the enemy. This trend continued in the Vietnam War. The MRF traded deception, cover, and dispersion for survivability. The noise and distinct appearance of the riverine craft made it easy for the enemy to detect and avoid the MRF. The enemy relied on small arms, machine guns, rocket propelled grenades, recoilless rifles, and mines to assault the riverine force. In response, the MRF armored its craft. However, armor plating alone did not protect the riverine force against armor piercing ordnance. To fend off the new armor piercing ordnance, the riverine force used bar armor to pre-detonate the round before it struck the armor siding. This worked temporarily, but improved accuracy and lethality of shoulder-fired weapons still disabled river assault craft. Nevertheless, the MRF continued to rely on armor and counterforce over cover, deception, or dispersion. The Colombian riverine force relied on deception to achieve surprise, rather than speed of planning and movement. In addition, the Colombians rely on craft that are fast, shallow-drafted, and possess some firepower capability. If engaged, the riverine force returns fire to suppress the enemy's fire and then speedily exits the kill zone. However, the enemy has shown a tactical skill to select the most favorable opportunity to engage the riverine force. When the Colombians coordinated riverine operations with heliborne operations, the guerrillas were able to disperse. But when the riverine force operated without support, the FARC have been able to wreak havoc.

Like the MRF after 1968, the Colombian riverine force dispersed its force in 19 locations. Unlike in Vietnam, the Colombians do not have helicopters or supporting artillery to defend against an enemy attack. Once a guerrilla force engaged the MRF, air and artillery provided the supporting fire to increase its probability of surviving an enemy initiated fire fight, despite being dispersed. The Colombians do not have such a capability.

The guerrilla goes to great lengths to avoid firepower. As demonstrated in the Seminole War, Vietnam, and Colombia, the enemy dispersed its force, relied on deception

by blending into physical and human terrain, and fought from fortified positions. These elements reduced the advantages of superior U.S. firepower. Such guerrilla tactics raised the cost of delivering effective firepower to kill the enemy. During the Vietnam War, estimates placed the cost of killing one VC guerrilla at \$400,000 in expended ordnance. Since the enemy usually retained the element of surprise against riverine forces, it was necessary to increase firepower to overcome the disadvantage of enemy initiated fire fights. The increased firepower made it difficult for an enemy to sustain an attack against the riverine force.

The guerrilla also sought to counter the system that was perceived to be its greatest threat, mainly the helicopter. The enemy considered the helicopter gunship to be the deadliest threat and its scouting and mobility to be a serious problem. Unconstrained by the geography of the riverine area, the helicopter could pursue the guerrilla into his sanctuaries. Helicopters were especially difficult to avoid once the guerrilla had been forced to vacate his concealed position. As a result, the VC trained to eliminate the low flying helicopter by concentrating automatic weapons fire in the flight path of the aircraft.

The trend toward more lethal anti air weapons and their ready accessibility are aiding the guerrilla in defeating aircraft. The accuracy of shoulder fired surface-to-air munitions has increased the threat to aircraft operating in close support of all forces, including riverine forces, and even though helicopters have become more survivable to ground fire, they remain susceptible to shoulder-launched missile fire and concentrated heavy machine gun fire.

4. Scouting

*Scouting is the means to locate the enemy to deliver effective firepower. Scouting gathers information and reports it.*¹⁴⁷ Scouting is a process that consists of searching, detecting, and then targeting or avoiding the enemy. The trend in riverine operations has been an increased use of aircraft to locate enemy activity. Although new sensor

¹⁴⁷Hughes, *Fleet Tactics*, p. 166.

technologies have drastically increased detection, search, and target capabilities since World War II, they have not been decisive in defeating the guerrilla.

In the Seminole War, it was recognized that forays into the interior without a guide was useless for locating the enemy. The riverine force had to rely on information gathered from defectors and guides to locate the Indian camps. Another more subtle measure was to use friendly Creek Indians as spies to penetrate the Seminole camps to determine its strength and intentions.

In the Vietnam War, the MRF gained most of its information from recently captured enemy troops, from VC who had rallied to the RVN side. When information was not available or if it was dated, the MRF still pursued operations into suspected enemy areas and relied on helicopter overflights to provide information so the riverine force would avoid enemy ambushes. Even so, the riverine force was often engaged by the enemy, who concealed their positions from the overflights.

Scouting was also improved by the trend of decreased time to transmit information. The radio allowed for information to be relayed quickly to the riverine force commander, who could use it to reposition forces quickly and take advantage of a changed situation. The commander of the riverine force had to detect an enemy, then track his movement within an area before he could target him with available firepower. The radio increased the speed with which information flowed, and thus the speed at which information was relayed to maneuver elements involved in the operation. As experienced in Colombia, the guerrilla has enhanced his own command and control process through the access to the same communications technology as the COLMAR.

The helicopter added a new dimension to riverine scouting. It allowed the riverine force to scout the countryside for enemy movement along the waterways, but was unable to detect the enemy in concealed positions or thick vegetation. Sensors were used to detect enemy movement in targeted areas, but it is difficult for sensors to determine friend from foe. The guerrilla recognized the threat and changed his tactics to operate in and around populated areas to avoid effective employment of sensors. Sensors did provide a means to alert the riverine force to movement in the areas they covered.

Today, the wide use of sensors (night vision devices, radar, motion detection devices, thermal imaging, etc.) has become common practice. Although they offer advantages, human intelligence still will be the predominate form of scouting to locate an enemy force. The introduction of aircraft to scout the riverine area provided information on the terrain and location of likely enemy areas, but do little in locating specific enemy positions or base areas. Thus, scouting against guerrilla opponents still requires the long-established practice of exploiting the local inhabitants, and ground reconnaissance. Without this information, the riverine force cannot deliver effective firepower.

5. Antiscouting

Actions taken to destroy, diminish, or preclude U.S. scouting effectiveness. Measures to deny the guerrilla knowledge of riverine force dispositions is a continuing struggle in guerrilla wars. Since the guerrilla gains information through his local intelligence networks, he can use the network to track riverine force movement into his area and decide whether or not to engage the riverine force. The riverine force tried to overcome this problem by moving at night and relying on stealth and deception as practiced during the Seminole Indian War. In Vietnam, the noise of engine powered riverine assault craft easily gave away the position of the riverine force. Nevertheless, the MRF did not pursue cover, deception, or dispersion to foil the enemies scouting capabilities, but relied instead on speed of movement to limit the enemy's ability to exploit its information.

The enemy relied on more subtle means to defeat the riverine forces' scouting capacity. During the day, he blended into the local village, and at night operated under the cover of darkness. He relied predominantly on stealth to avoid detection, and used cover and concealment to protect his positions and caches of supplies. Such measures prompted the riverine force to rely upon local intelligence to identify the enemy and locate his resources. Technology has yet to foil the guerrilla's tactic of blending into the population. Only constabulary techniques can provide the information needed to target

the guerrillas in a village. These techniques are dependent on the level of guerrilla control in a village. As cited by Anthony Joes:

In those districts officially declared under government control ("cleared"), the government may legitimately impose the severest penalties upon civilians who actively cooperate with the guerrillas. But in contested areas, where the government by definition is unable to guarantee the peasants physical security, civilian cooperation with the insurgents must be treated as a natural or at least pardonable phenomenon.¹⁴⁸

6. Command and Control

*Command decides what is needed from forces. Control transforms the need into action.*¹⁴⁹ The major trend has been toward a unified operational command structure that exercises control over all elements assigned to a riverine operation. In the Seminole War, it took four years before LT McLaughlin established the Mosquito Fleet. The command structure evolved from coordinated operations between Army and Navy components to a unified command structure. Once LT McLaughlin had a functional command, he was able to direct the riverine force operations to support the land campaign plan without the need to request ad hoc support. Without the distraction of having to coordinate support, the Mosquito Fleet was able to launch more operations.

During Vietnam, the MRF was not controlled by a unified command at the task force level. Instead, throughout its existence, the MRF had to coordinate each operation. Although the Navy established a close working relationship with the Army, the MRF still required seven to ten days to plan and implement an operation. More important, when the 9th Infantry Division gained the dedicated heliborne support of the 1st Air Cavalry, it decided to extract itself from riverine operations altogether. The Navy adjusted to the shift in Army support for riverine operations by establishing Task Force 194. Admiral Zumwalt and Captain Salzer recognized the importance of maintaining a riverine force,

¹⁴⁸Joes, p. 213.

¹⁴⁹Hughes, *Fleet Tactics*, p. 147.

and incorporated the riverine assault craft into the SEA LORDS campaign. TF 194 turned out to be the closest thing to a unified task force that employed riverine force operations. Despite integration of the MRF into SEA LORDS, TF 194 was not able to secure dedicated ground and air elements. It still had to fight the battle of coordinating support for each operation. Nevertheless, TF 194 was able to integrate all naval elements from TF 115, 116, and 117 to create a more unified force for achieving its objectives.

Strongly encouraged by the United States, the Colombians are moving toward a unified operational command structure for riverine operations. The Colombian Marine Corps has operational command of all riverine operations in the interior of the country, but lacks organic air support. They must therefore coordinate air support with the national police.

Throughout, the time it has taken to establish a unified riverine task force command structure has remained the same: three years. Current U.S. riverine doctrine acknowledges that a unified command structure is more effective than coordinating operations in controlling riverine operations. Current doctrine calls for a single commander to be assigned operational control over sea, air and ground elements conducting riverine operations:

The objective in organizing for riverine operations is the formation of a fully integrated combined arms force specifically tailored to provide the necessary mobility, unity of effort, and fire superiority to achieve the assigned task.¹⁵⁰

Another trend has been the increase in the span of tactical control that a commander can exercise over his riverine forces engaged in combat. In the Seminole War, the ground commander positioned himself well forward to direct the actions of the riverine force. Overall control was exercised through preplanned actions and verbal or written commands delivered by messengers, and, during the engagements, subordinates relied on the commander's intent as a guide to their actions. Thus a great deal of control was

¹⁵⁰Proposed Joint PUB 3-06: Doctrine for Joint Riverine Operations, May 1994, p. II-4.

delegated to subordinate officers when the force was divided or dispersed during an operation.

In Vietnam, the wireless radio entered the scene, and the control function changed. A riverine force commander could relay commands to each subordinate element while remaining off the battle field. Additionally, the subordinates transmitted vital information to the commander enabling the latter to reposition forces rather than delegating such a decision. The MRF commander relied on radio nets to allow the to allocate supporting fire to the unit that needed it the most. The airborne command post played a crucial role in riverine force battles. It remained above the chaos and confusion of the engagement the better to locate the enemy and reposition forces.

The enemy used various command and control countermeasures against the MRF. Captured documents showed that the VC had penetrated the radio net and could monitor message traffic. Espionage and penetration of allied forces proved troublesome to U.S. operational security. The guerrilla today has access to more sophisticated equipment and may rely on such measures to detect riverine force operational plans and tactics. The U.S. shifted to encrypted radio communications, but at a cost. The encryption reduced the range of radio transmissions and required all units to follow a communications plan to ensure that codes and call signs were changed at the same time to avoid loss of communications. The net effect is that the enemy has always developed measures to impede riverine force command and control functions.

The trend toward encrypted communications has provided a more secure means of communications for U.S. riverine forces, but poses problems for combined operations. When working with foreign militaries, the compatibility of encrypted radios will prove to be a problem.

Overall, control of the riverine force has become more complex as a commander tries to coordinate movement of ground, air, and waterborne elements and take advantage of potential for speedier communications and movements. The rate that information flows into a command post can overwhelm a commander who must orchestrate the battle.

C. THE TACTICAL CONSTANTS OF RIVERINE WARFARE

1. Maneuver

History has shown that the purpose of maneuver has been to establish a superior fighting position.¹⁵¹ The constant has been the riverine force's use of tactical maneuver to fix the enemy in a position so effective fire can be directed against him. In the initial stages of each riverine campaign, each time the United States first employed riverine forces in an offensive strategy to search out and destroy the enemy. Search and destroy operations centered on the tactic of maneuvering riverine forces into a position so that maxim firepower could be delivered against an enemy force. The primary goal of the riverine force was to immobilize the guerrilla whereupon firepower could be used to destroy him. Firepower was conceived to be the predominant means of defeating the enemy in battle.

Only after search and destroy operations became ineffective in eliminating guerrilla units did the riverine forces shift to a strategy of sustained operations in areas deemed to be vital to the enemy, in other words, clear and hold operations. By holding vital areas in the riverine environment, the riverine force drew the enemy to attack him. When the guerrilla attempted to contest control, the riverine force had the advantage of fighting from a defensive posture in familiar terrain, and could direct its superior firepower potential against the exposed guerrilla unit.

2. Firepower

Suppressive fire remains the one great constant that riverine forces have pursued since the Seminole War. Riverine forces that attempted to penetrate guerrilla sanctuaries usually came under enemy fire before the opponent could be detected the enemy. Therefore, riverine forces in the Seminole War, Vietnam War, and the current Colombian anti-drug campaign have striven to increase their suppressive fire potential relative to the guerrilla's. In the Seminole War, Lieutenants Powell and McLaughlin pushed for heavier weapons: carronades to be placed on board barges and schooners. Attempts were made

¹⁵¹Hughes, *Fleet Tactics*, p. 176.

to attach 4-pounders to the canoes. Suppressive fire capabilities reached their peak with the MRF. The organic firepower of the river assault craft exceeded anything previously used by a riverine force. In addition, the MRF added artillery and helicopter gunships. The COLMAR are currently in the process of deciding on how to increase their firepower capacity. The near annihilation of two riverine force elements spurred the Colombian Marines to conduct more large unit operations with added firepower to overcome the guerrillas' ability to deliver firepower first. Riverine forces without the capability to deliver suppressive firepower will be unable to operate in guerrilla controlled areas, unless they improve their scouting and stealth capabilities.

In Vietnam, as in other more conventional wars, the tendency was to overestimate the effectiveness of riverine craft firepower against an enemy position ashore. The effectiveness of riverine weapons was brought into question after two friendly fire incidents on 4 December 1967 and 8 May 1968. In the first incident a company of U.S. infantry were along a river bank in a nipa and coconut grove. The vegetation was thick and provided concealment for unit. A Riverine Assault Division mistook the soldiers for the enemy and opened up with all weapons including a flamethrower from a zippo. Despite prolonged and intense fire, not a single soldier was scratched. In the second incident, the troops were in a tree line with no ground growth. The riverine craft fired from ideal conditions and at close range but did not inflict a single casualty upon the U.S. ground troops. Reports from VC defectors confirmed that few casualties were attributable to the fire of riverine craft.¹⁵² This suggests that the anticipated lethality of the firepower possessed by the riverine force will continue to fall short of its expected capability to produce enemy dead.

3. Counterforce

Emphasis on means of survivability has been a major constant for the riverine force. This is because of a greater unwillingness to take casualties in the riverine force than in the guerrilla force. Survivability was pursued by increasing the river assault crafts'

¹⁵²Friedman, p. 340.

protection (armor), speed, or firepower potential. Defending against the aforementioned trend of increased enemy firepower was a serious problem in Vietnam and is a current one in Colombia. In Vietnam, the lethality of armor piecing rounds and mines threatened the MRF's ability to move along the waterways, and much effort was expended to improve the survivability of riverine assault craft that were often caught in ambushes at close range. Most enemy-initiated engagements occurred within 50 yards, demanding heavy reliance on armor plating and counterfire. Water mines led the MRF to attempt counter mine tactics, which never overcame the threat.

The effort to protect riverine craft from such weapons continues unabated. The Colombian riverine force does not have the resources to develop a fleet of armored riverine craft. Used instead are high speed, shallow-draft, and low profile boats to evade enemy firepower. The Colombians recognize the operational limitations of the riverine combat elements in conducting offensive operations. To overcome this limitation the riverine force has increased its firepower potential by adding heliborne assault troops and more riverine combat elements to pursue large scale offensive operations.

Guerrillas use the terrain to limit the effectiveness of superior firepower. They disperse their force, construct fortifications for protection, use concealment, and rely on stealthy movement to avoid detection. These actions have combined to reduce the riverine forces' firepower advantage.

4. Scouting

Timely and accurate scouting remains the first step in an effective riverine warfare campaign. Human intelligence was and still is the primary means to gather information on guerrilla activities in the riverine area. Essential to fighting guerrillas has been the ability to exploit information from captured enemy, defectors, or the local people. Humint was highlighted in the riverine campaigns in the Seminole and Vietnam Wars, and it is equally important in Colombia. Each time an operation was launched without current information on the enemy's disposition, the riverine force encountered either an abandoned position or was caught in an ambush.

In Vietnam, helicopters became a new means of scouting in search and destroy missions. The helicopter has been useful in directing the ground force when it became engaged, but it has generally failed to detect well-concealed enemy positions or enemy movement under the cover of jungle canopy or forested areas as to prevent ambush..

In clear and hold operations scouting was directed to move safely to holding positions and then detect enemy activity against the dispersed riverine force elements. In every campaign, information from the people and indigenous military allowed the riverine force to develop the same warfare tactics used by the enemy. Technology has led to improved sensors, but has not eliminated the requirement for human intelligence. Information gained from the local people is still the most valuable means to gain knowledge on the enemy's situation and intentions. Without it, the riverine force has little chance of avoiding enemy ambushes, sabotage, evasion and harassing tactics. Scouting capacity will continue to be a factor in riverine warfare co-equal in importance with firepower.

5. Command and Control and C² Countermeasures

A constant in riverine warfare has been the lack of a unified task force commander at the outset of hostilities. In the Seminole War, initial operations began with the Army and Navy coordinating operations. It was not until the Mosquito Fleet was formed that a unified task force commander gained tactical control over all riverine force assets and personnel. In Vietnam, the MRF never developed a unified command that exercised tactical control over both the Army and Navy ground, air and water borne forces. Instead, the MRF relied on a cooperative relationship between its component commanders. SEALORDS prompted the Navy to create TF 194. The commander of TF 194 was essentially the closest that the Navy came to a unified force under a single operational commander. CTF 194 controlled elements from three naval task forces and the riverine forces assigned to it, but still had to beg for air and ground support. In each instance, the lack of a unified command complicated and delayed operations by the riverine force. Especially in the modern scenario of fighting jointly, a riverine force

commander will have no excuse for not gaining control over air, ground, and river forces to prosecute a campaign.

An interesting constant of successful operations has been the proclivity to maintain control through column formations. The constrained waterways dictate that a column is the practicable way to progress up a river. The riverine force tries to maintain unit integrity during movement to the objective area through such measures. Nevertheless, as a result, a large riverine force formation loses tactical concentration. The column forewarns an enemy of a riverine force's movement. Because, a powered column formation of almost any size is easily heard.

D. SUMMARY OF TACTICAL TRENDS AND CONSTANTS

1. Summary of Trends in Riverine Warfare Against a Guerrilla Opponent

*Riverine forces have increasingly pursued weapons that deliver a rapid rate of fire to suppress enemy fire. Volume of fire has steadily replaced weapons capable of accurate fire.

*The lethal potential of firepower in riverine warfare has substantially increased (shoulder-held guided SAMs rapid fire weapons, armor piercing ordnance, portable rocket propelled grenades, command detonated mines, etc.).

*The increased lethality of firepower has been to the advantage of the guerrilla. The consequences of an increase make it more hazardous to err in riverine warfare because the risk of destructive attack by a guerrilla force has increased. The advances in weapons lethality have outpaced the technological advancements in riverine craft survivability.

*Due to the increasing combat potential of the guerrilla, resupply of strongpoints requires additional means of delivery besides the sole reliance on the waterways, but air resupply will also be made risky by guerrillas..

*Deception has become increasingly more important in offensive riverine operations. Technological innovations (internal combustion engines, communications, etc.) have made

riverine craft noisier, enabling the enemy to detect approaching forces from a greater distance.

*Staying power was centered on survivability of riverine craft (armor plating, bar armor, increased organic firepower) up through the Vietnam War. Currently, speed and firepower have replaced the emphasis placed on armor as the means to survive enemy firepower and probably stealth (quiet engines) in the future..

*Supporting arms have increased the firepower capacity of riverine forces. Longer range of firepower potential (artillery and airpower) has allowed the riverine force to concentrate more suppressive firepower against an enemy force.

*Sensor technology has increased the potential of riverine forces to operate at night and in poorly charted waters. Nevertheless, traditional scouting techniques that rely on human intelligence are essential for maintaining the initiative.

*The speed of electronic communications has increased the commanders' direct control over all units engaged in riverine operations.

*The speed of tactical maneuver has increased in riverine operations. In force on force engagements, riverine forces relied on canoes and foot movement to envelop an enemy as seen in the Everglades. By the time of the Vietnam War, riverine forces often used helicopters to vertically insert or reposition troops in battle to engage an enemy in place. In Colombia, shallow-draft craft and speed have increased the mobility of riverine elements to penetrate into the narrower and shallower waterways, increasing the ability to maneuver forces. Although not widely used helicopters still remain a means to maneuver forces.

*Airpower (helicopters gunships) added a new dimension to riverine warfare. The riverine force was able to deploy smaller elements, since air delivered fire support increased its firepower potential.

*The duration of a riverine force operation has decreased. The trend has been an increase in the frequency of shorter duration operations. (In the Seminole War, riverine forces conducted a single waterborne operation for sixty days. In Vietnam, riverine force

operations did not exceed four days in the field, but more were conducted. In Colombia riverine operations have not extended over two days for a single mission).

2. Summary of Constants in Riverine Warfare Against a Guerrilla Opponent

- *Guerrillas attempt to separate the riverine force from its indirect fire support by engaging at close range.

- *By relying on deception and cover, the guerrilla seldom presents the riverine force an opportunity to maximize its firepower potential.

- *The guerrilla has access to modern weapons.

- *The guerrilla exploits the advantages of a riverine area to protract a conflict where water networks are accompanied by dense foliage.

- *Maneuver in riverine warfare has remained constrained by terrain.

- *Riverine warfare has regrettably been misapplied in the attempt at the outset to destroy an opponent rather than pursue control of the waterways and the riverine territory.

- *Complete control of a riverine area has not been achieved against a guerrilla opponent. The massive force required has made an objective of complete control too costly to pursue.

- *The U.S. has tended to try to use riverine forces for the purpose of exploiting the waterways to deliver firepower against a guerrilla force and his base areas, generally with poor results.

- *The enemy has consistently initiated nearly all of the majority of engagements.

- *Riverine forces rely on firepower over cover and deception to fight against a guerrilla force.

- *Search and destroy operations have never been effective in achieving control over a riverine area.

- *Despite the increased lethality of firepower, firepower remains less effective than expected in destroying the enemy. In Vietnam War the use of artillery, waterborne fire, grenades, and air delivered ordnance did not destroy the enemy as expected. The enemy

used the terrain and vegetation to protect itself from overwhelming firepower. It required the infantryman to apply close and direct fire onto an enemy position to destroy him.

*Coordinated operations between the naval and military components of a riverine force require more time to develop a plan and conduct an operation than integrated riverine forces under one operational commander, yet the former command setup has been the initial structure.

*Scouting has always relied on human intelligence when fighting a guerrilla force for the critical information. Technology has not changed this decisive factor. New means have only marginally increased the effectiveness of operations.

*Deception remains a constant practice by guerrilla forces to hinder riverine force operations (blending into the population, using feints to distract riverine assaults, and providing false information through the local people).

*To succeed, the guerrilla must achieve tactical surprise in offensive operations.

E. OPPOSING TACTICS: RAIDING VERSUS STRONGPOINTS

Two riverine strategies to achieve control over a riverine environment have been pursued by riverine forces. The first, search and destroy, is the employment of a riverine force to launch a campaign consisting of raids to eliminate the opposing force. Against a guerrilla, raiding tactics that support such a strategy require extensive intelligence gathering activities in order to be effective. Scouting is essential. In 1906 Colonel C. E. Callwell authored *Small Wars: A Tactical Textbook for Imperial Soldiers* based on his experience in guerrilla warfare. Callwell noted:

Guerrilla warfare means that the regular troops are spread about a hostile country where all their movements can be watched by the enemy and where their camps are full of spies. Experience proves that partisan leaders can seldom be trusted, and that in all dealings with them great circumspection is essential . . . Such conditions call for a very efficient and watchful secret service for a trustworthy corps of spies and for a wide

awake police, with a capable intelligence department controlling the whole.¹⁵³

Scouting remains the first essential element of guerrilla warfare. As seen in each case study, the guerrilla has retained the initiative when the riverine force did not have an effective scouting capability.

Raiding tactics were also noted for their ineffectiveness to gain control. Attempting to eliminate the guerrilla by raids did little more than to harass their operations in the riverine area. Raiding, when successful, produces temporary demoralization of the enemy in a selected area of the riverine environment. Complete area control requires a demoralization of the enemy by way of a persistent waterborne presence, with the capability to sustain raiding operations throughout the riverine sanctuary. Partial control is an objective that reflects economy of force measures. Establishing strongpoints in the riverine area at selected sites is analogous to the "oil spot" theory of counterinsurgency. Strongpoints increase the people's perception of the government's legitimacy; it highlights the capability to contest the guerrilla's dominance within a selected region. Once it is recognized that the government can contest the guerrilla's control, an environment is established that will facilitate the defection of indigenous people from the guerrilla to the government. Defense of strongpoints and sustaining the ability to launch limited raids are essential to gaining limited control. The absence of a capability to repel an enemy's attacks against every stronghold will result in the failure of the overall campaign. This capability is dependent on an effective firepower potential and scouting that incorporates the indigenous population. In Colombia, the riverine force has established a network of strongpoints along the vital waterways in the country with the object of denying the enemy longitudinal movement. Although the strategy of denying enemy movement along the waterways is in its incipient phase, the riverine force has forced the FARC to contest COLMAR's use of the waterways. As a result, the riverine force has changed the nature

¹⁵³Colonel C. E. Callwell, *Small Wars: A Tactical textbook for Imperial Soldiers* (Novato, CA: Presidio Press, 1990), p. 144. Reprint of original 1906 edition.

of the conflict. With sufficient scouting and firepower capabilities, the riverine force can solidify its control of the strategic waterways and impede the activities of the guerrillas around its strongpoints.

F. CONCLUSION

The mobile river force is an essential element to implant and sustain strongpoints in a riverine environment. Without a mobile force, the enemy will remain uncontested in his sanctuary. The riverine force, in combination with river forces, increases a country's capability to fight in a riverine area. Although complete control against a guerrilla opponent would be an almost unprecedented outcome of a riverine warfare campaign, partial control is achievable that imposes severe penalties on the enemy disproportionate to the riverine forces commitment.. Partial control of an area will establish a base from which a government can work on improving its legitimacy. However, without the coercive power to sustain a strongpoint a guerrilla force can contest the governments political and military control in the riverine area. Therefore, practitioners of riverine warfare must recognize that when fighting against a guerrilla opponent the preferred tactic of establishing strongpoints is the stronger of the two tactics. Once a strongpoint is sustained, the riverine force can maintain pressure in the vicinity of its influence through limited raids and patrols.

VI. DISPELLING THE STYGIAN MYTH

A. PRESENT RIVERINE FORCE

It has taken a wartime requirement to regenerate a riverine warfare capability in the U.S. military arsenal. As it prepared to train the Colombian Marine Corps to fight the drug war, the U.S. Marine Corps recognizes its own deficiency in the conduct of riverine warfare:

The lack of a deployable, active duty brown water capability, however; means the U.S. lacks a capability to provide competent trainers, useful material, and tested, effective doctrine to assist our allies in brown water riverine environments.¹⁵⁴

All that remained of the large riverine force that was developed during the Vietnam War was relegated to the Naval Reserve, and was not sufficient to provide a "deployable capability, [and] a source of competent trainers, tested doctrine, and proven material assets."¹⁵⁵

Riverine operations are envisioned to impact more upon Third World countries exposed to "low intensity" hostilities. Within these conflicts, the "land-water interface" is the principle terrain feature. To seize this key terrain, a riverine force is required to conduct denial and river control operations. In 1990, the Navy and Marine Corps were capable of conducting small boat operations to surveil and interdict hostile forces. However, the Naval Services did not have a capacity to "completely control riverine lines of communications and contiguous terrain."¹⁵⁶

¹⁵⁴Headquarters, United States Marine Corps, SO/LIC INFORMATION PAPER, SUBJECT: COMPARATIVE RIVERINE TASKINGS AND CAPABILITIES, Washington, DC, 26 March 1990.

¹⁵⁵Ibid., p. 2.

¹⁵⁶Ibid., p. 3.

In 1987, the Commanding General of Fleet Marine Forces, Atlantic, Alfred M. Gray, recognized the need to develop a riverine capability. He directed the procurement of Rigid Raiding Craft (RCA) to augment the Combat Rubber Raider Craft (CRRS) deployed with the Marine Amphibious Units. Recognizing the limitations of this riverine force, Gray, now the Corps' Commandant, directed the Service to achieve an enhanced riverine warfare capability. This was in response to the request by the Commander in Chief Southern Command (COMSOCOM) for the Marine Corps to take the lead in riverine operations in Colombia. The following chronology highlights the evolution of the Marine riverine force capability:

- 1987- LTGEN Gray orders procurement of Rigid Raiding Craft (REC) for Battalion Landing Teams deploying with Marine Amphibious Units (MAU)
- 1987- REC augments Combat Rubber Raider Craft deployed on MAU
- 1989- Marine Corps purchases prototype Riverine Assault Craft (RAC)
- 1990- RAC Platoon formed from elements of 1st Battalion, 6th Marine Regiment, Second Marine Division, Camp Lejeune, North Carolina
- 1992- RAC Platoon consolidated with Small Boat Platoon to form Small Craft Company
- 1992- RAC Platoon conducts training in Central America, South America, United States
- 1994- Small Craft Company supports 2d MARDIV during Exercise "Agile Provider-94"

"Agile Provider-94" was the first large scale exercise in which a mobile riverine force supported a division's combat and security operations in a riverine environment. The 6th Marine Regiment, supported by the small craft unit, was designated the Mobile Riverine Force (MRF). It demonstrated the following mission capabilities:

- | | |
|------------------|----------------------|
| -Troop Transport | -Armed Escort |
| -Reconnaissance | -Direct Fire Support |
| -Surveillance | -Command and Control |
| -Security | -Medical Evacuation |
| -Resupply | -Interception |
| -Insert/Extract | -Interdiction |

One such mission required the MRF to seize, occupy and defend an objective in order to establish a workable Forward Support Base (FSB). From this FSB, the MRF was to conduct subsequent operations up river.¹⁵⁷ The FSB can be envisioned as a strongpoint for establishing a land/waterborne presence. This can facilitate the gaining of partial control of the riverine area.

The current riverine force capability for the Marine Corps consists of one Small Craft Company, comprised of 67 18-foot Boston Whaler Rigid Raider Craft, 14 35-foot Riverine Assault Craft, and 90 15-foot Zodiac Combat Rubber Raid Craft.¹⁵⁸ The company is organized into a headquarters platoon, maintenance platoon, two riverine assault platoons, and one raiding craft platoon. The unit is manned by seven officers and 133 enlisted personnel, including four U.S. Navy corpsman. It is capable of providing a "single wave" lift capability for 380 marines. The primary weapon systems are the .50cal and Mk 19 40-mm machine guns, mounted aboard the riverine assault craft.

In 1990, the required operational capability (ROC) for a riverine assault craft included the following requirement to support Marine Air Ground Task Force (MAGTF) riverine operations in low intensity conflicts:

. . .interdicting the flow of narcotics and precursor chemicals in conjunction with host nation forces; denying free use of river systems to hostile forces; protecting friendly lines of communication; establishing and maintaining complete control of a riverine area; evacuating noncombatants from a permissive or nonpermissive riverine area; conducting peacekeeping or stability operations in a riverine area; and/or conducting limited objective operations, such as raids or seizures. . . .¹⁵⁹

¹⁵⁷Frag Order 025-94 (AGILE PROVIDER - 94; FSB Establishment), Mission Statement.

¹⁵⁸CAPT Michael Walker, USMC, Small Craft Company, 2d Marine Division, Camp Lejeune, NC, phone interview by authors, 1 December 1994, Naval Postgraduate School, Monterey, CA.

¹⁵⁹Commanding General, MCCDC, REQUIRED OPERATIONAL CAPABILITY (ROC) FOR A RIVERINE ASSAULT CRAFT (RAC), 1 NOVEMBER 1990.

B. WHAT IS THE STYGIAN MYTH?

The belief that a riverine force, regardless of size, can achieve "complete control of the riverine area" against an unconventional opponent has prevailed up to the present day. The case studies reveal that absolute control has not been obtainable even at the cost of unleashing the black hell of total war. The sole exception of gaining complete control in the history of U.S. riverine operations took place during the American Civil War. The opportunity to use the full potential of riverine forces against defending Confederate positions provided the Union with area control, but at a grave cost in personnel and resources. The ruthlessness of waging riverine warfare against the guerrilla is just as destructive, if not more so, due to the propensity to involve innocent noncombatants. The U.S. military style of attritional warfare continues to favor a reliance on strategies of search and destroy. However, raiding strategies have not been effective in demoralizing the will of the enemy. The seizing and holding of strongpoints in the enemy's riverine sanctuary has prompted more favorable results. The clear and hold strategies take the initiative away from the guerrilla, and force either withdrawal or attack. The riverine force must have a fire power potential that can thwart the expected lethality of the enemy with a discriminative effect that reduces collateral damage to the contiguous population and natural resources.

C. WHAT CAN THE NAVAL SERVICES OFFER?

No single service, except the nascent Navy and Marines Corps riverine team, possesses the requisite forces tasked and equipped to conduct area control operations at level four in the riverine environment.¹⁶⁰ The naval services together can provide a means to pursue the integrated riverine tactics necessary to establish partial control. The

¹⁶⁰Hughes' Model defines level four as gaining temporary control of longitudinal and cross-waterway movement in the riverine environment.

contributions of each naval component are essential to impose a serious cost on the enemy that is large compared with the burden on our side.

The Navy's contributions are threefold: the safe projection of the riverine forces into the area of operations; the denial of enemy movement on the waterways, and the sustainment of operations through "the delivery of goods and services." Specifically, the unconventional riverine capability is resident within the Naval Special Warfare community and fulfills the following roles: scouting, limited raids, and command and control countermeasures. These functions can provide the necessary advantages for establishing partial control. Partial control requires a commitment of riverine forces sufficient to implant and sustain a waterborne/land presence at strategically critical locations.

The Marine Corps has a riverine capability that can conduct operations to achieve partial control of a riverine area. The capability to seize and hold vital strongpoints along strategic waterways is dependent upon the integration of the combat potential of both naval components. The Navy and Marine Corps forces, working as a team, are best suited to dominate an enemy who is capable of waging a ruthless and protracted guerrilla war, the most likely type of future conflict.

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